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ABSTRACT

Unit II of regional studies for grade five is arranged into three sub-units which comprise two case studies and look at the Midwest region as a whole. The objective of the case studies is to illustrate factors which bring about changing use of the land. Sub-unit one, a case study on Twin Cities, traces the cities' development from the days when the Indians inhabited the area up to today, comparing the development of one city which grew up around a water power site and another which developed at what was then the head of river navigation for steamers. Sub-unit two, case study on the Red River Valley, traces the region in four different periods from Indian-occupied territory to the present. The study shows changes in crops grown in terms of changing markets. Sub-unit three looks at the chief characteristics of the entire Midwest region and raises the question: Should the Upper Midwest be included in the same region as the rest of this area? The teacher's guide provides program descriptions, course objectives, teaching strategies, and an explanation of format in ED 062 226. Other related documents are a selected reading on the Red River Valley ED 062 227, ED 061 134, and SO 002 732 through SO 002 741. (Several pages may be illegible.) (Author/SJM)

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Grade Five
Unit II: THE MIDWEST
SUB-UNIT A: CASE STUDY ON
THE TWIN CITIES

RESOURCE UNIT

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INTRODUCTION

I. Introduction to the Unit on the Mid-West

This case study on the Twin Cities introduces the study of the Midwest as a region. Pupils begin with the Twin Cities area, find out that this metropolitan area serves as the main commercial city for the Upper Midwest, and set up questions to answer about whether or not the cities really belong with the region of the Midwest as it was delineated in the overview to the study of the United States.

Teachers who wish to do so may then turn to sub-unit B and have the class study the Red River Valley region which pupils have already found to have been important to the development of the Twin Cities. Some teachers may wish to omit this case study in the interests of saving time, but they should examine the introduction to it before deciding to do so.

Finally, the class should turn to sub-unit C on the Midwest. They should study the main characteristics of the area delimited, compare them with what they have learned in the case studies on the Twin Cites and the Red River Valley, and decide whether or not they would really group
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the Upper Midwest with the Midwest as a region when comparing the area with what they have learned in the overview about other parts of the country. It should be noted that one possible activity during this sub-unit is to have groups select other large cities in the Midwest to analyze in the same fashion that they studied the Twin Cities area, but in much less detail.

This case study on the Twin Cities was developed particularly for those who live in the Upper Midwest. However, it can be used easily by other schools, just as easily as can any of the other case studies in the fifth grade course. Some teachers may wish to substitute a case study on Chicago or one of the other large cities in the Midwest as the main case study for the region. If so, they should follow the same approach suggested in this case study, identifying three or four eras in the city's development in order to see how the area has changed over time. If the teacher does select one of the other large cities, the class might then turn to the Twin Cities before studying sub-unit C on the Midwest as a whole. That case study would permit them to analyze the relationship between the Upper Midwest and the larger region of the Midwest as a whole.

II. Introduction to Sub-Unit on the Twin Cities

This case study is designed to introduce the ideas that: (a) different cultures make different uses of the same environment, and (b) advancing technology enables man to develop more uses of his environment and to alter that environment. To build these ideas, the present metropolitan area is viewed at three different times: (1) around 1650 when the Indians occupied the area, (2) in the era from 1849 to 1890 when flour milling and lumbering constituted the economic base, and (3) in the present when the economy is based on many industries and is far more complex than in the past. The background paper to the case study explains some of the differences in much more detail.

Although many other ideas are developed, this case study attempts to focus upon the broad generalization that "man uses his physical environment in terms of his cultural values, perceptions, and level of technology." The major differences between the use of the environment in these three eras man be summarized as follows:

1. Indian Life about 1650 -- Because of his technology and his cultural values, the life of the Indian was closely associated with the physical aspects of his surroundings. He used them without modifying them greatly.

2. The Lumbering-Flour Milling Era -- The white man saw the area differently than did the Indian. To the white man the forest and the wild animals were not home and food but resources. A combination of physical characteristics and cultural factors attracted the economic activities associated with lumbering and flour milling to the Twin Cities area. The Twin Cities, like many other cities, grew up at the site of a water falls and at the head of navigation on the river at that time. It also developed close to a fort built at the confluence of two large rivers. However, these factors alone are not enough to explain the early development of the cities.

3. Present Day Twin Cities -- While lumbering and flour milling have declined in relative importance, the Twin Cities have continued to grow. The cities are important manufacturing, trade, and financial centers for the Upper Midwest Region.

Teachers are reminded that this subunit is a resource unit. They should add their own ideas and modify the unit for a particular class. In doing so, they should consider the same factors suggested in the introduction to the Overview unit. Moreover, it would be helpful to review the Teacher's Guide to the Fifth Grade Course before beginning this unit.

OBJECTIVES

This unit should make progress toward developing the following objectives:

CONCEPTS

1. Diversity-variability: region

2. Location

   a. Position

   b. Situation: relationships; changing situation.

   c. Site: elevation; landforms (plains, hills, river levee,* bluff,* valley); water (river, water falls,* head of navigation*); climate (continental,* precipitation, temperature, growing season); soil; vegetation (coniferous and deciduous forests; prairies*); break in transportation.

3. Cultural use of environment: population density, land use, urbanization,

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industrial development, agricultural types, trapping and hunting, transportation, technology, specialization, division of labor, diversification.

4. Change: physical; biotic; man-made (locks,* dams,* bridges, dredging,* construction of roads, railroads, buildings).

5. Interrelatedness: areal association, trade, market.

6. Culture: values, perception.

GENERALIZATIONS

1. Every place has three types of location: position, site, and situation.

   a. Location is a position which sets a phenomenon at a specific point on the earth's surface, usually designated in terms of an abstract grid and described in terms of latitude and longitude.

   b. Site relates a phenomenon to the detailed physical setting of the area it occupies.

n this curriculum. Others are reviewed from earlier courses
th activities designed to increase depth of understanding
of concept to new data.

   c. Situation describes a phenomenon in areal relationship with other phenomena with which it is associated.

2. Phenomena are distributed unevenly over the earth's surface, resulting in diversity or variability from one place to another.

3. Temperature is affected by the distance from the equator, elevation, distance from warm water bodies, prevailing winds, and physical features which block winds from certain directions.

   a. Places in the interior of continents tend to have greater extremes of temperature than places along the coast.

4. Rainfall is affected by distance from bodies of warm water, ocean currents, wind direction, temperature, and physical features which block winds carrying moisture.

5. Trees need more water than grasses do.

6. Natural vegetation is affected by temperature.

7. Soil in a particular place is affected by the type of basic rock in the region; the climate; vegetation; erosion; wind; and glaciers and rivers which move soil; as well as by how man treats the soil.

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8. Nature changes the face of the earth through physical and biotic processes.

9. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

   a. Man changes the character of the earth.

   b. Machinery and power make possible greater production per person (including greater capacity for moving people and goods).

   c. The significance of location depends upon cultural developments both within and outside of a country or region.

   d. A change in situation brings about a corresponding change in the use of a site.

   e. Improved transportation facilities make possible wider and bigger markets as well as better and less costly access to resources.

   f. New inventions and discoveries open up new fields of production.

10. Some things can be produced better in one place than in another because of climate, resources, transportation

routes, access to resources, access to markets, people's skills, etc.

a. Towns need means of shipping goods in and out; they are likely to grow up where transportation is good, particularly where different types of transportation meet.

  1) A place needs cheap and rapid transportation in order to carry on much trade with other places.

  2) Cities which become big trading centers tend to grow up where there is a break in transportation and so where goods must be moved from one type of transportation to another or from one company's transportation facilities to those of another company.

  3) Inland water routes provide cheaper transportation for heavy goods than do railroads, trucks, or planes.

    a) Since coal is very bulky and so costly to transport except by water, most plants which use coal to make electricity are located near the source of coal or in a port city near the place at which the coal is unloaded from boats.

b. Factories must have some form of power to run machinery.

  1) Power for industry is obtained from a number of sources, including water power or steam and electricity produced by burning coal.

c. Factories which are not close to the source of their raw materials or to their markets may develop for a number of reasons such as: (1) new ideas of people in the area; (2) the number of skilled workers in the area who developed their skills by working in other but related types of jobs; (3) the need of earlier companies to switch to new products in order to remain in business.

d. Today factories tend to locate close to the source of required raw materials if these materials are perishable or heavier or bulkier than their finished product; factories tend to locate closer to their markets than to the source of needed materials if their products are heavier and bulkier than the raw materials and if their products are perishable.

II. A number of factors -- climate, surface features, natural resources, accessability, and history -- affect settlement patterns.

a. Factories need good transportation facilities but large cities with many factories and large numbers of people also attract improved transportation facilities.

b. The growth of factories in a town attract people, stores, etc. which in turn make the area more attractive to new factories and they also stimulate the growth of old ones.

c. Cities are likely to grow if they perform functions which are needed by the surrounding community or for a larger functional region.

Also, see 10 above.

12. Specialization of individuals and regions makes for interdependence.

a. The people who live in one community depend upon each other for different goods and services and for markets for their goods.

b. People in most societies of the world depend upon people who live in other communities, regions, and countries for goods and services and for markets for goods.

c. Cities usually have a greater division of labor and specialization than small towns or farm areas.

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d. Diversification of production makes a company or a region less dependent upon price fluctuations for one product or upon the supply of specific resources.

e. Industry today is dependent upon iron and steel for machines even when the factory does not use steel as a resource in making its products.

13. Forests can be used to obtain lumber and other timber products.

14. A region is an area of one or more homogeneous features. The core area is highly homogeneous, but there are transitional zones where boundaries are drawn between different regions.

    a. Regions are delimited on many different bases, depending upon the purpose of the study. Some are delimited on the basis of a single phenomenon, some on the basis of multiple phenomena, and some on the basis of functional relationships.

    b. Different parts of a city usually have different but interrelated functions.

15. People in different societies differ as to what they think good and bad.

SKILLS

The broad skill toward which teaching is ultimately directed is underlined. A specific aspect of a skill or an understanding needed to learn a skill is in plain type.

1. Attacks problems in a rational manner.
    a. Sets up hypotheses.
    b. Figures out ways of testing hypotheses.
2. Is skilled in gathering information.
    a. Gains information by studying pictures.
    b. Gains information by observing the world around him.
    c. Gains information by listening.
    d. Interprets line and bar graphs.
    e. Uses the table of contents and index to locate information in a book.
    f. Interprets map symbols in terms of the map legend.
    g. Draws inferences from maps.
        1) Draws inferences from a comparison of different map patterns

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4. Evaluates sources of information.
    a. Identifies types of sources which can be used by the historian and recognizes the limitations of each.
        1) Evaluates sources in terms of completeness of data.
        2) Checks on the bias and competency of authors and other producers of materials.
5. Organizes and analyzes data and draws conclusions.
    a. Applies previously-learned concepts and generalizations to new data.
    b. Tests hypotheses against data.
    c. Generalizes from data.
6. Works effectively with others.
    a. Accepts his share of responsibility for the work of a group.
    b. Participates actively without trying to dominate.
7. Communicates effectively with others.
    a. Clarifies his purpose and main ideas.

   b. Organizes his material to fit his theme.

   c. Considers his audience.

   d. Uses techniques to clarify ideas and arouse interest.

8. Is able to empathize with others, seeing things through their eyes.

ATTITUDES

1. Is curious about social data.

2. Is sceptical of theories of single causation in the social sciences.

3. Evaluates information and sources of information before accepting evidence and generalizations.

4. Believes that people of different interests, abilities, and background can contribute to American society.

AN ABBREVIATED OUTLINE OF CONTENTS

I. The Twin Cities are located in Minnesota close to the northern border of the U.S., in the central part of the continent, and on the Mississippi River.

   A. The Twin Cities are located at about 45 degrees N. latitude and 93 degrees W. longitude. This places them close to the northern border of the U.S. and gives them a continental climate.

   B. The Twin Cities are located at the juncture of several rivers in an area in which glaciers left scattered hills and depressions which have become lakes.

   C. The Twin Cities are located in an area in which the natural vegetation consisted of deciduous trees, although the early white men found some prairie mixed with trees and shrubs close to the Mississippi, particularly to the west of it. /Section also deals with effects of vegetation and glaciation upon soils./

   D. The Twin Cities area is located in a state with large iron ore deposits; however, the iron can be shipped to the east more easily by way of the Great Lakes than to Minneapolis and then to the east.

   E. The Twin Cities are the last large urban area east of the Great Plains in the northern part of the country.

   F. The cities of Minneapolis and St. Paul began at separate locations on the Mississippi River but have expanded to meet each other.

II. We look at how Sioux Indians lived in the Twin Cities area about 1650. Because of the state of his technology, the life of the Indian was closely associated with the physical aspects of his surroundings.

   A. Our knowledge of early Indian life in this era is not based upon written records; however, early explorers prepared some written accounts of Sioux life in the period soon after 1650.

B. The early Indians in the area were dependent upon what nature provided them in the immediate area.

III. We look at how white men used the Twin Cities area from 1849 to 1890 during the lumber-flour milling era. The white man saw the Twin Cities area differently from the way the Indian saw it; to the white man the forest and wild animals were not home and food, but resources.

A. A combination of physical relationships and cultural factors attracted the economic activities associated with lumbering and flour milling to the Twin Cities area.

1. The Twin Cities are close to an area where both farming and lumbering were easily possible.

2. The Twin Cities grew up around two rivers.

3. Early Fort Snelling had an influence on the development of the area.

B. The white settlers in the period of 1849-1890 differed greatly from the Indians in how they used the physical features of the region and in how they changed the physical features; they developed new types of power which changed types of transportation and which made possible lumber and flour mills and other kinds of factories.

C. The white settlers built up an important lumbering industry based upon the northern forests.

D. The settlers developed an important milling industry in the Twin Cities area. Minneapolis became the most important flour milling city in the country for some years. A number of factors led to the development of the flour milling industry in Minneapolis.

E. The population of the Twin Cities increased rapidly during the period from 1849 to 1880 in part because of the growth of the lumbering and flour industries. People came to the Twin Cities from eastern states and from Europe.

F. The increase in population and the growth of the lumber and flour industries led to the development of many other kinds of industries and stores.

G. Although Minneapolis had grown rapidly, in 1880 it was still very small as compared to today; neighboring townships were very lightly populated, and places now part of Minneapolis were summer homes and recreation areas.

H. St. Paul had also grown rapidly from 1849 to 1880 but finally fell behind Minneapolis in population. It became a transportation and wholesale center and a center for manufacturing shoes, clothes, and agricultural implements.

IV. We look at the Twin Cities today. It is the major manufacturing, trade, and financial center for the Upper Midwest region.

A. The Twin Cities continued to grow despite the decline of steamboats on the Mississippi, the decline of lumbering in Minnesota, and the decline of flour milling in terms of relative importance.

B. Even though Minneapolis no longer leads in flour production, the headquarters of the biggest flour milling companies are still located in Minneapolis, and the companies have diversified their products.

C. Minneapolis has no lumber mills but both Minneapolis and St. Paul still use some products coming from the forests of northern Minnesota.

D. The Twin Cities are still a transportation center, even though the old steamboats disappeared on the river.

E. Water power is no longer so important in the Twin Cities area; most of the power now comes from electricity produced with coal.

F. A look at the Twin Cities today indicates that many factors have affected their growth besides the development of new types of transportation, new sources of power, and diversification within the old flour-milling companies.

1. About one fourth of the people working in the Twin Cities are working in manufacturing firms; the others are working in many different kinds of occupations.

2. The Twin Cities have many factories other than those using flour or timber products. Some of the industries had their beginnings in the Twin Cities before 1890; others have developed since then, some quite recently.

3. Outside of but close to the Twin Cities are two other important types of industry plus many smaller ones.

4. The growth of industry is affected by the growth of population, other commercial enterprises, transportation routes, etc. and in turn helps stimulate increased population growth, new non-manufacturing enterprises, increased transportation facilities, more schools and hospitals, etc., and an increase in the number of people providing professional services.

5. The Twin Cities and the surrounding suburbs can be regionalized according to types of buildings and functions.

G. The Twin Cities are dependent upon other areas for raw materials and for markets. They provide the trade center for the Upper Midwest region.

OBJECTIVES

G. Location is a position which sets a phenomenon at a specific point on the earth's surface, usually designated in terms of an abstract grid and described in terms of latitude and longitude.

S. Uses map grid to locate places.

S. Uses atlas index to locate places.

S. Applies previously learned concepts and generalizations.

S. Sets up hypotheses.

S. Tests hypotheses against data.

G. Temperature is affected by the distance from the equator, elevation, distance from warm water bodies, prevailing winds, and physical features which block winds from certain directions.

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OUTLINE OF CONTENT

I. The Twin Cities are located in Minnesota close to the northern border of the U.S., in the central part of the continent, and on the Mississippi River.

   A. The Twin Cities are located at about 45° N. latitude and 93° W. longitude. This places them close to the northern border of the U.S. and gives them a continental climate.

EACHING PROCEDURES	MATERIALS
1. Tell the class that they are now going to study the Twin Cities and the region within which it lies. Then do either a or b below.	
a. If pupils live in the general area of the Twin Cities, begin this case study by asking them to locate the Twin Cities on a map of the United States and identify its location in terms of its longitude and latitude. Write this position on the chalkboard. Then move on to activity number 2.	Physical-political map of United States.
b. If pupils do not live in the general area of the Twin Cities, have pupils use an atlas index or the list provided in the student atlas to identify the position of Minneapolis and St. Paul in terms of latitude and longitude. Then have a pupil locate the Twin Cities on a wall map of the United States by using this information about their position.	World atlas. Center's "Student Almanac." Map of United States.
2. Now ask: Where are the Twin Cities in relationship to the North Pole and the Equator? (midway between) What type of climate would it have? Have pupils hypothesize about its climate on the basis of what they learned in the overview unit on the United States. They should set up hypotheses about temperature, differences in different seasons, about relative warmth or cold at different times of year, and about precipitation. Pupils may remember some of this information if they examined this particular area carefully as they studied climate in the overview unit. If so, let them review the climatic features of Twin Cities area at this time and the reasons for the type of climate found there. If not let them set up hypotheses and then test them against climatic charts in their student almanac and perhaps against maps in Borchert's Minnesota's Changing	Center's "Student Almanac." Borchert, Minnesota's Changing Geography, p. 12.

G. Rainfall is affected by distance from bodies of warm water, ocean currents, wind direction, temperature, and physical features which block winds carrying moisture.

G. Places in the interior of continents tend to have greater extremes of temperature than places along the coast.

S. Draws inferences from maps.

S. Interprets map symbols (contour lines).

S. Applies previously-learned concepts and generalizations to new data.

S. Sets up hypotheses.

S. Tests hypotheses against data.

G. Nature changes the face of the earth through physical processes.

B. The Twin Cities are located at the juncture of several rivers in an area in which glaciers left scattered hills and depressions which have become lakes.

Geography.

Now have pupils use their student almanacs to locate cities close to the same latitude as the Twin Cities Portland, Oregon; St. John's, New Brunswick; Montrea Canada; Bordeaux, France; Turin, Italy; Odessa, U.S. Which of the cities has a climate most similar to th the Twin Cities area? Have pupils locate the other on a map of the world by using the information in th almanac on the latitude and longitude for each city. ask: How can you explain the differences in climate tween the Twin Cities and Portland? between the Twi and Bordeaux etc. Pupils should examine the locatio each of the cities to see what factors might explain differences in temperature and rainfall at the same tude.

3. Furnish each student with a Twin Cities map (an oil map would be fine). Have students observe the cours and the locations of lakes. Have pupils examine a t sheet showing some of the features or build a physic model of the Twin Cities area using the topographica a guide. Such a sheet and particularly the model wi pupils discern the hilly and flat areas easily.

Review with pupils what they learned in the overview the work of glaciers. Say: Glaciers covered this p nesota a number of times. From what you learned ear glaciers, what do you think might be the relationshi these glaciers and some of the features shown on thi

Now show pupils the filmstrip Geological History of using only those frames which you think will be most pupils and being careful to discuss them thoroughly. ask: Were your guesses about the relationship betw and landforms in the Twin Cities area correct or mus

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Center's "Student Almanac". Map of World.

Oil company map of Twin Cities. Topographic sheets of Twin Cities area. Relief models of Twin Cities area. For a map of just land and water in the area, see Anderson, Communities and Their Needs, p. 47.

Filmstrip: Geological History of Minnesota, University of Minnesota.

S. Sets up hypotheses.

S. Applies previously-learned concepts and generalizations to new data.

S. Tests hypotheses against data.

G. Trees need more water than grasses do.

G. Natural vegetation is affected by temperature.

G. Soil in a particular place is affected by the type of basic rock in the region; the climate; vegetation; erosion; wind; and glaciers and rivers which move soil; as well as by how man treats the soil.

G. Nature changes the face of the earth through biotic processes.

S. Differentiates between small scale and large scale maps and knows when to use each.

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C. The Twin Cities are located in an area in which the natural vegetation consisted of deciduous trees, although the early white men found some prairie mixed with trees and shrubs close to the Mississippi, particularly to the west of it.

1. Although the Twin Cities are located in an area of deciduous trees, they are not too far south of the region of coniferous forests which once covered much of northern Minnesota; moreover, they are close to the western and southern prairie region.

2. Partly as a result of the natural vegetation and the movement of soil by glaciers, the soils in the Twin Cities area are quite fertile, the soils on the prairies to the west and south of the Twin Cities area are rich prairie soils.

out new statements which explain the relationship

Now have pupils examine map of landforms in Minne
the Twin Cities area in relationship to the vario
landforms. Perhaps show additional pictures to i
landforms in Twin Cities and nearby area.

4. Ask: What else would affect the soils in the Twin
besides the glaciers which moved soil into the ar
pils set up hypotheses on the basis of their prev
the overview unit. Then have them examine a map
vegetation in Minnesota. In what type of area wa
Minneapolis located? What kind of natural vegeta
to the west of the Twin Cities? to the North of
Cities? Why do you think there are these differe
natural vegetation? Read aloud brief references
tors to the vegetation close to St. Anthony Falls
the map of Minnesota show the variations around S
Falls? Also ask: How might the natural vegetati
the soils in these areas? Let pupils examine a s
Minnesota to check on their guesses. (If the tea
used activity 71 in the overview unit, this activi
be largely a review session rather than one i
hypothesizing and testing of hypotheses. However
should still examine and compare the vegetation a
so that the information about vegetation and soil
fresh in their minds as they study the rest of th

he relationships?

ndforms in Minnesota to see
hip to the various types of
al pictures to illustrate
by area.

Map of landforms in Borchert, Minnesota's Changing Geography, p. 15.

oils in the Twin Cities area
oil into the area? Let pu-
is of their previous study of
n examine a map of natural
type of area was St. Paul-
f natural vegetation is found
o the North of the Twin
re these differences in
rief references of early visi-
t. Anthony Falls. Why doesn't
iations around St. Anthony
natural vegetation affect
pils examine a soils map of
es. (If the teacher has
nit, this activity should
ather than one involving
theses. However, the pupils
he vegetation and soils maps,
etation and soils will be
y the rest of this case study.)

Map of vegetation in Minnesota's Changing Geography, p. 24.
For map of soils see background paper.
For descriptions by early explorers, see "Readings."

S. Sets up hypotheses.

S. Sets up hypotheses.

S. Sets up hypotheses.

S. Sets up hypotheses.

G. Every place has three types of location: position, site, and situation.

D. The Twin Cities area is located in a state with large iron ore deposits; however, the iron can be shipped to the east more easily by way of the Great Lakes than to Minneapolis and then to the east.

E. The Twin Cities are the last large urban area east of the Great Plains in the northern part of the country.

F. The cities of Minneapolis and St. Paul began at separate locations on the Mississippi River but have expanded to meet each other.

5. Have pupils examine a map of iron ore deposits. Ask: How might the location of these ore deposits affect the Twin Cit area? Let pupils set up hypotheses to check as they continue their studies.

6. Have pupils look at a physical map of the United States and notice the location of the Twin Cities once again. Say: We have noticed that the Twin Cities are located on a major rive What large body of water borders on Minnesota? Can you think of any possible ways in which it might affect the developmen of the Twin Cities? (Let pupils set up guesses about the possible effects of the Great Lakes on the shipping of goods from northern Minnesota to the Twin Cities.)

7. Show pupils a population map of the United States and a map which divides the country into regions (as developed in activity 96 in the "Overview to the United States"). Ask: What do you notice about the Twin Cities in relationship to other large centers of population in the middle part of the United States? (Relate to position as large urban center on eastern edge of northern Great Plains.) What do you think this position might mean in terms of the relationships between the Twin Cities and this northern plains area? Let pupils set up hypotheses to check as they study the unit.

8. Say: We have really been locating the Twin Cities area befor studying it. In what ways have we located it? (Position, situation, site). Now lets's look at a map of the Twin Citie once more. Show pupils maps used in acitivity 3 again. Ask: Why do you think cities grew up in these places? (Let pupils set up hypotheses.) Why do you think Minneapolis and St. Pau are called the Twin Cities. Why do you suppose two cities gr

posits. Ask: How affect the Twin Cities heck as they continue	Borchert, *Minnesota's Changing Geography*, p. 63.
e United States and nce again. Say: We cated on a major river. esota? Can you think ffect the development guesses about the he shipping of goods es.)	Physical-political map of United States.
ed States and a map as developed in ed States"). Ask: in relationship to middle part of the arge urban center on What do you think relationships be- plains area? Let study the unit.	Population map of U,S. (e.g. Informative Classrooom Picture set on *The Northeast*, plate 16. Map of U.S. regions developed in overview.
vin Cities area before ted it? (Position, map of the Twin Cities tivity 3 again. Ask: places? (Let pupils nneapolis and St. Paul suppose two cities grew	Oil company map of Twin Cities. Or Anderson, *Communities and Their Needs*, p. 47.

G. Location is a position which sets a phenomenon at a specific point on the earth's surface, usually designated in terms of an abstract grid and described in terms of latitude and longitude.

G. Site relates a phenomenon to the detailed physical setting of the area it occupies.

G. Situation describes a phenomenon in areal relationship with other phenomena with which it is associated.

G. Man changes the character of the earth.

S. Is able to empathize with others, seeing things through their eyes.

G. People in different societies differ as to what they think good and bad.

II. We look at how Sioux Indians lived in the Twin City area about 1650. Because of the state of his technology, the life of the Indian was closely associated with the physical aspects of his surroundings.

up instead of just one? We are going to study the development of the Twin Cities by looking at the area at three different time periods: when the Indians lived here, in the early days of the white men in the area, and today. As we study these different periods, you should try to decide why the cities developed here at all, and why two cities developed rather than just one, and why they eventually grew together.

If you have available the textbook on Communities and Their Needs, you may wish to substitute the map of the Twin Cities area which shows only the land and river and no settlements for the oil company map. If so, have pupils guess where an early fort might be placed, where the two cities might begin to grow up, etc. Then tell them about what they will be doing in the rest of the unit (see above paragraph).

9. Have the class examine a physical-political map of the United States. Ask them to assume that it is about the year 1650. What would be different on the map? (e.g. Would there be all of these cities and state boundaries? Would there be place names of the white men such as St. Louis, Madison, etc.? Would the means of transportation pictured on the map be in existence?) What would be the same as today? (e.g. rivers, mountains, lakes, oceans, etc.)

Physical Political map of U.S.

0. Say: Most of the history books on the United States begin with a story of Columbus or the Norsemen. Where do you think a history of the United States would begin from an Indian's point of view? Would the Indians consider men like Columbus and other explorers as heroes? (Perhaps let several pupils role-play a group of Indians discussing the questions.)

S. Identifies types of sources which can be used by the historian and recognizes the limitations of each.

S. Evaluates sources in terms of the completeness of data.

S. Checks on the bias and competency of authors and other producers of materials.

sources
the
izes the

terms of
data.

nd compe-
other
ls.

A. Our knowledge of early Indian life in this era is not based upon written records; however early explorers prepared some written accounts of Sioux life in the period soon after 1650.

11. Ask class: Suppose you were going to write a h
school from the time it was first built? How w
lect the information you would need? Suppose y
write a history of our town? What sources coul
Suppose you wanted to write a history of our ar
white men came and before any written records w
What sources could you use? Let pupils make gu
discuss advantages and limitations of sources w
members have suggested. Now do one or more of
activities:

    a. If pupils live in the Twin Cities area, they
    Historical Society Museum or the Science Mus
    Paul and look at remains which have been fou
    life in the area. Have the museum director
    the museum describe how scholars find out ab
    early Indians from these remains.

    b. Show the filmstrip on How We Learn About the
    deals with sources of history. Have pupils
    types of things which might be used to recons
    life prior to the coming of the white men in
    Cities area.

    c. Show the film History in Your Community whic
    the many things in a community which can tel
    early history. The main point that should b
    gard to this film is that history does not a
    written. Discuss: How can we find out abou
    tory of the Indians even though they did not
    records? How does the lack of written reco
    knowledge?

g to write a history of our
built? How would you col-
ed? Suppose you wanted to
t sources could you use?
tory of our area before any
tten records were kept.
pupils make guesses and then
s of sources which the class
ne or more of the following

ies area, they might visit the
ne Science Museum in St.
have been found from Indian
seum director or someone in
rs find out about the life of
ns.

arn About the Past which
Have pupils identify the
used to reconstruct Indian
white men in the Twin

Filmstrip: *How We Learn About the Past*, Filmstrip of the Month Club.

Community which illustrates
which can tell us about its
that should be raised in re-
ry does not always have to be
find out about the early his-
they did not leave written
written records limit our

Film: *History in Your Community*, 15 min.

S. Recognizes differences in difficulty of proving statements.

G. Man uses his physical environment in terms of his cultural values, perceptions and level of technology.

S. Sets up hypotheses.

B. The early Indians in the area were dependent upon what nature provided them in the immediate area.

1. The many Indian groups in America lived quite differently, in part because of their different physical surroundings.

d. Use articles from the Gopher Historian to help scholars have recreated Fort Snelling. Ask: C methods be used to find out about how the India this area before the white men came? What othe might be used?

e. Be sure to discuss difficulties historians face ing certainty about either facts or their state what happened in the past. Compare the degree available about statements on Sioux Indian life Twin Cities area in 1650 with that available ab vents of the past school year in their school.

12. If pupils have not come through the first grade co Center's curriculum, you may wish to show the film Early America to illustrate the fact that Indian g not all alike in their way of living. After seein pupils can be asked to make guesses about what the Sioux might have been like in the Twin Cities area (If necessary, ask pupils to look at a vegetation area once more to see if it gives them any ideas a Indian life.)

If pupils have studied the first grade course, rev in which the Chippewa lived in Minnesota and diffe tween the Chippewa and Hopi ways of life. Ask: W of the reasons why they lived differently? Then h set up hypotheses about what Sioux life might have the Twin Cities area. Remind pupils to consider w learned about the site of the area, as they set up theses.

istorian to help pupils see how
nelling. Ask: Could similar
out how the Indians lived in
came? What other methods

"Restoration of Fort Snelling," Gopher Historian, Fall, 1966.

s historians face in achiev-
ts or their statements about
mpare the degree of proof
Sioux Indian life in the
that available about the e-
in their school.

he first grade course in the
to show the film Indians of
act that Indian groups were
ing. After seeing the film
es about what the life of the
Twin Cities area in 1650.
at a vegetation map of the
them any ideas about early

Film: Indians of Early America.

Vegetation map of Minnesota.

grade course, review the way
nnesota and differences be-
of life. Ask: What were some
ferently? Then have pupils
x life might have been like in
ils to consider what they have
a, as they set up their hypo-

S. Gains information by listening.

G. People in different societies differ as to what they think good and bad.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

S. Uses the table of contents and index to locate information in a book.

S. Works effectively with others (accepts his share of responsibility for the work of a group; participates actively without trying to dominate.)

S. Communicates effectively with others (clarifies his purpose and main ideas, organizes his material to fit his theme, considers his audience, uses techniques to clarify ideas and arouse interest.)

2. The Indian viewed the land differently than the early white man did.

3. The Sioux Indians were hunters who moved around from one spot to another without making many changes in their physical surroundings. (Although later the Sioux were pushed out of the larger part of the woodland areas of Minnesota and became largely plains dwellers, they still inhabited much of central Minnesota in 1650.)

13. Read aloud the section in The Light in the Forest by Conrad Richter which tells of the "foolish ways" of the White Man. The selection vividly illustrates the contrasting viewpoints of the Indians and the white man on the subjects of private property, religion, accumulation of wealth, land use, and the ability to live in the wilderness. Discuss the differing viewpoints on land use: (1) How did the Indians want to use the land? (2) How did the white man want to use it? (3) Could these two contrasting points of view be held by both groups in the same area without conflict? Why or why not?

Richter, Light in the Forest, pp. 27-31.

14. Divide the class into groups to do research on the Indians who lived in the Twin Cities area. Before they begin, review use of index and table of contents in books. Pupils should study such topics as: (1) What did the Sioux do for a living? (2) How did they travel? (3) What type of homes did the Sioux have? (4) What type of clothing did they wear? (5) What types of ~~tools~~ did they use? Let the groups make tape recordings of their commentary to accompany illustrated rolls which they make for a mock TV box or "theater." Or some groups might like to make murals or models to illustrate their findings. Perhaps one group might be assigned the job of acting out a typical day in the life of an Indian boy or girl, being certain to illustrate the close relationship between the immediate natural resources and the lives of the Indians.

Poatgieter, The Gopher Reader, pp. 5-22; Borchert, Minnesota's Changing Geography. pp. 28-29. Hillbrand and Clark, Our Mi
nesota, pp. 78-9
Hollbrun, Thirty-
Second State, pp.
35 (pictures). Bl
gen, Building Min
sota; The Gopher
torian, Spring 19
and Spring, 1961

est by Conrad
he White Man.
ing viewpoints
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nd use, and the
e differing
ns want to use
se it? (3)
held by both
or why not?

the Indians
y begin, re-
ks. Pupils
Sioux do for
type of homes
did they wear?
groups make
ny illustrated
ater." Or
s to illus-
be assigned
e of an
e the close
ources and

Richter, Light in the Forest, pp. 27-31.

Poatgieter, The Gopher Reader, pp. 5-22; Borchert, Minnesota's Changing Geography. pp. 28-29. Hillbrand and Clark, Our Minnesota, pp. 78-92. Heilbron, Thirty-Second State, pp. 29-35 (pictures). Blegen, Building Minnesota; The Gopher Historian, Spring 1960 and Spring, 1961.

S. Generalizes from data.

A. IS SCEPTICAL OF THEORIES OF SINGLE CAUSATION IN THE SOCIAL SCIENCES.

S. Sets up hypotheses.

III. We look at how white men used the Twin Cities area from 1849 to 1890 during the lumber-flour milling era. The white man saw the Twin Cities differently from the way the Indian saw it; to the white man the forest and wild animals were not home and food but resources.

- A. A combination of physical relationships and cultural factors attracted the economic activities associated with lumbering and flour milling to the Twin City area.
  - 1. The Twin Cities are close to an area where both farming and lumbering were easily possible.
  - 2. The Twin Cities grew up around two rivers.
    - a. The rivers were more important in the early days of Minnesota than they are today.

5. To evaluate what children have learned about how the Sioux Indians lived in the Twin Cities area, have each child prepare a chart which contrasts the Sioux and the white man's point of view regarding the natural landscape, how people should earn a living, and what constitutes the "good life."

6. Have pupils look once more at the list of hypotheses which they set up in activity #8 about why the Twin Cities might have grown up where they did. Then do the following:

   a. Refer again to the vegetation map used earlier in the case study. Through what kinds of vegetation did the Mississippi flow before it reached the Minneapolis-St. Paul region? (forest) The Minnesota? (mainly through prairie). Would lumber be a good product on the frontier? Why? Would farming be easier on prairie soils or in forest areas? Why? Would farmers need lumber? Why? What farm products would lumbermen need?

      Vegetation map of Minnesota.

   b. Show a physical map of the United States or of Minnesota. What waterways dominate southern Minnesota? (Mississippi, Minnesota, St. Croix) Why would these waterways be more important for transportation in 1850 than today? (Absence of other kinds of modern transportation facilities.)

      Physical map of United States or of Minnesota.

S. Differentiates between small scale and large scale maps and knows when to use each.

S. Sets up hypotheses.

G. Certain physical features of a site are more desirable than others for the development of a port city.

G. Factories must have some form of power to run machinery.

b. The bluff above the confluence of the two rivers made an excellent site for a military fort and there were forests nearby for building materials.

c. St Anthony Falls provided power for lumber mills and for grinding flour; above the falls was the first good spot to cross the river for many, many miles (coming from the south). Minneapolis grew up around the falls and the place where the river could be crossed.

d. Downstream from the place where the Minnesota flows into the Mississippi River, St. Paul grew up at the head of steamboat navigation on the Mississippi, where a natural levee made it easy to dock and unload steamboats, and where a dry stream bed provided an easy gradient to the bluffs above the river.

c. Look at a large scale map of the Mississip
entry of the Minnesota River and St. Anthon
view with the class their guesses about why
features might have attracted settlers. Wo
tures have attracted settlement by the Indi
What is the advantage of this large-scale m

Show photos of steep banks along the Missis
Snelling and other places below the St. Ant
the low banks above the falls and have pupi
position of Nicollet Island. Ask: Why wou
above the falls have been a good spot to bu
Show pupils a map where the head of steambo
was on the river and project several pictur
sectional diagrams showing the natural leve
gradient to the bluffs above. Ask: Why wo
been a good spot to build a town?

-

sissippi showing the
Anthony Falls. Re-
out why these physical
rs. Would the same fea-
he Indians? Also ask:
scale map?

Mississippi at Fort
St. Anthony falls and
ve pupils note the
Why would this area
t to build a town?
steamboat navigation
pictures and/or cross-
al levee and easy
Why would this have

Large scale map of Mississippi River in Minnesota. (e.g.Anderson,Communities & Their Needs,p47. Photos and cross-sectional diagrams in Schwartz and Thiel, Minnesota's Rocks and Waters, pp. 315, 325, 328.

For photos of river at Snelling and other points, see Szarkowski, The Face of Minnesota, p. 42, 234; Bergman, Minneoota in Pictures, pictures of Centennial Showboat tied up below bluff at U. of Minn.; Steinhauser, Geog. in the General College, p. 4.

For pictures showing river and St. Paul in 1840's and 1850's, see

S. Sets up hypotheses and figures out ways of testing them.

S. Tests hypotheses against data.

A. EVALUATES INFORMATION AND SOURCES OF INFORMATION BEFORE ACCEPTING EVIDENCE AND GENERALIZATIONS.

A. BELIEVES THAT PEOPLE OF DIFFERENT INTERESTS, ABILITIES, AND BACKGROUND CAN CONTRIBUTE TO AMERICAN SOCIETY.

S. Checks for completeness of data.

S. Checks on the bias and competency of witnesses and authors.

3. Early Fort Snelling had an influence on the development of the area.
   - a. It was set up in part to protect the early American fur traders and to keep out the former English fur traders. A fur trading center was established across the river from the fort in the present Mendota area. The fort was also to keep whites off Indian lands.
   - b. The army set up both a lumber mill and a flour mill at the falls of St. Anthony in order to provide lumber and flour for the fort. Some of the original lumber was cut close by but expeditions were also sent up the Rum River to cut logs for lumber. Most of the early wheat was shipped up the Mississippi from settlements further south, although some was grown around the fort.
   - c. White settlers came in to take advantage of the fort's protection and to provide services needed by the fort.
     - 1) Other traders moved in close to the fort to trade with the Indians and to provide liquor for the soldiers.
     - 2) Some of the soldiers settled in the area as they left the army; others

17. Say: Suppose you had been white men and had known t
Indians still lived in the area. Why might you have
to move into this area? Why might you have hesitate
move into the area? Would you have been more likely
move into an area close to an army fort or far from
fort? Why?

Now tell pupils that the army built a fort where the
ta flows into the Mississippi., Locate it on map an
pictures of it. Ask: Why might this have been a go
tion for the fort? What do you think the effect of
fort might have been on white settlement? Let pupi
up hypotheses about the effects. Ask: How might we
to find out if we are right? What kinds of data mig
collect? Then let pupils read brief accounts of the
ning of the fort and its activities at St. Anthony F
the early settlements which grew up close to the for
let them explore any other kinds of data which they
suggested as a means of testing their hypotheses. (
pupils should read different accounts in order to ob
data and differing interpretations.) After pupils h
pleted their reading, analyze their earlier hypothes
the effects of the fort (in this activity) and abou
possible attractions of physical features in the area
8). Also have pupils compare different accounts. W
might they differ somewhat?

ite men ana had known that
ea. Why might you have wanted
might you have hesitated to
u have been more likely to
army fort or far from an army

built a fort where the Minneso-
., Locate it on map and show
ght this have been a good loca-
ou think the effect of such a
e settlement? Let pupils set
ts. Ask: How might we check
What kinds of data might we
d brief accounts of the begin-
vities at St. Anthony Falls and
rew up close to the fort. Also
nds of data which they have
ng their hypotheses. (Different
accounts in order to obtain more
tions.) After pupils have com-
their earlier hypotheses about
this activity) and about the
al features in the area (activity
different accounts. Why

Gopher Historian, Spring, 1960, p. 2; Poatgieter and Dunn, Gopher Reader, p. 118. Heilbron, 32nd. State, p. 65.

Accounts are available in most elementary geography and history books on Minnesota. (see bibliography). See also some of the selections in the mimeographed material on "Early Minnesota" in "Selected Readings."

Pictures of the fort can be found in most of the same books. See also artist's painting on pp. 48-49 of Anderson, Communities and Their Needs. (in color) or in Heilbron, Thirty-Second State, pp. 50-51.

S. Generalizes from data.

B.

S. Uses map scale to estimate distances.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. Machinery and power make possible greater production per person (including greater who came to work for the army in non-military capacities settled near the fort.

3) Many of the early settlers came to the fort from Canada where they had gone from Europe and found conditions different from what they had been led to expect. They were from the Selkirk Colony.

4) The early settlers squatted on the land before it was opened for purchase. Some were forced to move by the fort commander and finally settled almost by accident at the site which grew into St. Paul; while others developed settlements on both sides of the river around the St. Anthony Falls area. The Twin Cities really began as three settlements: St. Paul, St. Anthony, and later Minneapolis.

B. The white settlers in the period of 1849-1890 differed greatly from the Indians in how they used the physical features of the region and in how they changed the physical features; they developed new types of power which changed types of transportation and which made possible lumber and flour mills and other kinds of factories.

1. The development of new types of power for transportation led to greatly increased development of the Twin Cities area.

18. Ask: What did you find out in your reading a
soldiers and earliest traders and settlers go
area? (canoe and keelboat) Read aloud a desc
early keelboat. How did they bring in suppli
these early types of boats compare with those
Indians? How would such boats limit the amou
brought into the area? Have pupils look at a
the scale to estimate the distance from Fort
some of the Mississippi settlements from whic
brought to the fort. Now tell pupils that a
reached Fort Snelling in 1823 only 4 years af
was begun. Show class pictures of early steam
brought goods and settlers to St. Paul. Ask:
be the effects of such boats on this area? Ha
pupils read about

our reading about how the
d settlers got to the fort
aloud a description of an
ing in supplies? How did
re with those used by the
imit the amount of supplies
ils look at a map and use
ce from Fort Snelling to
nts from which goods were
upils that a steamboat
ly 4 years after the fort
of early steamboats which
. Paul. Ask: What might
this area? Have several

For pictures of early steamboats, see Poatgieter and Dunn, Gopher Reader, pp. 163, 165.

See page 162 of the Gopher Reader for a description of the keelboat. See pictures in Heilbron, p. 84. For early description of steam-capacity for moving goods and people.

G. People in most societies of the world depend upon people who live in other communities and regions for goods and services and for markets for their goods.

A. IS CURIOUS ABOUT SOCIAL DATA.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. Cities which become big trading centers tend to grow up where there is a break in transportation and so where goods must be moved from one type of transportation to another.

a. The steamboat replaced earlier types of river boats and brought most of the early settlers to Minnesota. They also brought in supplies and carried out finished products.

early steamboats on the river and tell the class more
about them.

19. Play the tape recording Steaming Up the River. This t
tells the story of an eleven year old boy who travelle
to St. Paul by steamboat and learned about the dangers
romance of piloting a boat on the Mississippi. The ta
provides a good introduction to river travel during th
steamboat stage.

20. Show the filmstrip Transportation from Horse to Jet an
afterwards discuss the effects of changes in technolog
transportation upon how man uses his physical environm
and upon trade and the effect on distances between pla
Then relate certain aspects of the film to the changes
transportation in the early days of Minnesota. How mi
other kinds of transportation affect the growth of Min
ta in the long run?

21. Point out that the steamboat reached the area many yea
fore the railroad did. Then ask: Why do you think St
grew more rapidly than the two towns of St. Anthony an
apolis in the early days?

ınd tell the class more

boats, see the Gopher Reader, pp. 162-164; Blegen, Building Minnesota, pp. 152-156; Ford, Minnesota, Past and Present, pp. 106-108.

ng Up the River. This tape
ear old boy who travelled
earned about the dangers and
he Mississippi. The tape
river travel during this

Tape: Steaming Up the River. This tape is available from Tapes for Teaching Library, Dept. of Education, Centennial Bldg., St. Paul.

on from Horse to Jet and
of changes in technology in
s his physical environment
n distances between places.
the film to the changes in
s of Minnesota. How might
ffect the growth of Minneso-

Filmstrip: Transportation from Horse to Jet, Life filmstrip.

ached the area many years be-
k: Why do you think St. Paul
towns of St. Anthony and Minne-

G. A number of factors -- climate, surface features, natural resources, accessability, and history -- affect settlement patterns

S. Sets up hypotheses.

G. A number of factors -- climate, surface features, natural resources, accessability, and history -- affect settlement patterns.

S. Sets up hypotheses and figures out ways of testing them.

G. People in most societies depend upon people who live in other communities and regions for goods and services and for markets for their goods.

S. Sets up hypotheses and figures out ways of testing them.

S. Tests hypotheses against data.

G. Man uses his physical environment in terms of his cultural

b. White men had both the desire and the technical knowledge to build a bridge across the river above the St. Anthony Falls; this bridge made it easier to move goods and people. By bridging the river, people could later build a railroad across to

22. Have pupils read different accounts about the Re which brought furs from the Red River Valley to Discuss: Why were the furs taken to St. Paul ra Minneapolis? (Examine map in Gopher Reader, p. discuss this question.) How did this fur traffi about the growth of St. Paul? How would the com roads at a later date affect the amount of trade Paul and the Red River Valley? (Let pupils make test later.)

23. Tell the pupils that in 1854 over 400 steamboat made in St. Paul and over 45,000 passengers arri Europe as well as from New England. Then ask: businesses do you think would grow up in St. Pau of these new settlers? (Let pupils set up hypot later.) Ask: How could we test our hypotheses? of pupils investigate the history of St. Paul fr 1890 to find out more about the businesses estab the people lived in St. Paul, and how the city w changes in transportation and incoming settlers. prepare to present an illustrated report on St. activity #34).

24. Say: Suppose you had lived in the late 1840's or three towns which sprang up close to Fort Snelli lems did you have in moving goods across the rive could you work out to make it easier to across than in boats? If you had wanted to buil where would you have tried first? How can we te of ours?

bout the Red River carts Valley to St. Paul. St. Paul rather than to Reader, p. 169 as pupils fur traffic help bring ould the coming of rail- nt of trade between St. pupils make guesses to	Ford, Minnesota, Past and Present, pp. 100-105. Blegen, Building Minnesota, pp. 156-157. Poatgieter and Dunn, Gopher Reader, pp. 166-169. See "Selected Readings."
steamboat landings were sengers arrived, many from Then ask: What kinds of in St. Paul as a result et up hypotheses to test ypotheses? Let a group St. Paul from 1848 to esses established, how the city was affected by ng settlers. They should port on St. Paul later (see	Gopher Reader, 98-101; Ford, Minnesota, Past and Present, pp. 99-101, 105, 108, 367-370; Blegen, Building Minnesota, pp. 144-147, 149-150, 165, 172-174, 283; "Selected Readings;" Gopher Historian, Spring, 1960, pp. 2,3,4, 24-26. Pictures in Heilbron, 32nd State, pp. 93, 100-02,104-05,202-203.
te 1840's or 1850's in one of the Fort Snelling. What prob- ss the river? What ways easier to take goods nted to build a bridge, w can we test these guesses	See material on early Minneapolis in "Readings;" Gopher Historian, Spring, 1961, pp. 2-3; Heilbron, Thirty-Second State, pp. 52,

values, perceptions, and level of technology.

S. Sets up hypotheses.

S. Tests hypotheses against data.

G. A number of factors -- climate, surface features, natural resources, accessability, and history -- affect settlement patterns.

G. People in most socities of the world depend upon people who live in other communities and regions for goods and services and for markets for their goods.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

the western part of the state.

c. The coming of the railroads made it easier to ship goods to eastern states and to bring in supplies and settlers from the east.

d. Although the railroad came to both Minneapolis and St. Paul, the early railroad bridge over the Mississippi gave Minneapolis an advantage in trade with areas west of the Twin Cities.

2. The white settlers made use of the St. Anthony falls to develop water power for their industries.

Now let pupils read about the early ferries and br
built in Minneapolis, and show pupils pictures of
and the first bridge across the river. Ask: Why
Indians build a bridge at this point? How would t
to build such bridges affect the possible use of
Minnesota?

25. Tell pupils about the first railroad between St. P
apolis. Perhaps read aloud a brief description of
trip. Ask: Why was the railroad important to the
Minneapolis?

Then tell pupils that a railroad was finally built
way from Prairie Du Chien to St. Paul and Minneapo
provided a rail route to Chicago. Ask: What effe
think this railroad would have upon the Twin Citie
When people wanted to build a railroad west of the
where do you think they would have put the bridge
this have affected the Twin Cities area? (Show pu
and pictures of where the railroads were built.)
travel by railroad affect those who wished to come
from the eastern part of the United States? Have
pils check their hypotheses about the effects of r
further reading. They should report their finding
class.

26. Ask: What do you think the St. Anthony Falls mea
Indians and to the early white explorers of the M
(Read aloud a brief quotation about how the early
had to portage around the falls.) Would the India
white explorers have thought of the falls as an a
disadvantage (other than as they liked the looks
Show the class early pictures of the falls. If p
them compare the pictures with the present-day fa

ferries and bridges ls pictures of Minneapolis er. Ask: Why didn't the t? How would the ability ossible use of railroads in	106 (pictues of ferry and bridge).
d between St. Paul and Minne- description of its first nportant to the growth of	Poatgieter and Dunn, Gopher Reader, p. 177 (for description of first trip).
s finally built all the ul and Minneapolis and so Ask: What effects do you the Twin Cities area? oad west of the Mississippi, out the bridge? How would area? (Show pupils maps were built.) How would wished to come to the area States? Have several pu- he effects of railroads by t their findings to the	Blegen, Building Minnesota, pp 244-249. Ford, Minnesota Past and Present, pp. 197, 270-273. For map indicating how eastern travellers came to the area before railroads, see Anderson, Communities and Their Needs, pp. 50-51.
hony Falls meant to the lorers of the Mississippi? how the early explorers Would the Indians and early falls as an advantage or iked the looks of the falls)? he falls. If possible, have present-day falls.	See "Readings" for description of portaging around the falls. See Heilbron, Thirty-Second State, pp. 13, 18 (early pictures of falls).

G. Power for industry is obtained from a number of sources, including water power.

S. Applies previously-learned concepts and generalizations to ne data.

S. Sets up hypotheses.

S. Tests hypotheses against data.

A. IS CURIOUS ABOUT SOCIAL DATA.

G. Man changes the character of the earth.

G. Some things can be produced better in one place than in another because of climate, resources, transportation routes, access to resources, access to markets, people's skills, etc.

G. Forests can be used to obtain lumber and other timber products.

C. The white settlers built up an important lumbering industry based upon the northern forests.

1. As people began to see the possibilities of using the northern forests, many people involved in lumbering in New England came to the Twin Cities to develop the lumbering industry.

2. Timber was cut in northern Minnesota and floated down the streams and rivers to the Mississippi and then down that river.

3. Railroads made it possible to cut timber far away from streams and rivers, since they could be used to get the logs to the rivers.

4. Lumber mills were set up in a number of towns, but much was sawed into lumber using the power at St. Anthony Falls. Much lumber was needed to meet the needs of the growing towns in the present Twin Cities area.

27. Now show the film Water Power which emphasizes how waterfalls were changed from hindrances to man's p an important souce of power. The film traces the of water power, chiefly in the United States, from mill of the early colonists to such modern project Boulder Dam, and the T.V.A. However, the film can to the early use of the waters of St. Anthony Fall settlers.

28. Ask: Suppose you had been a lumberman living in t part of the country and much of the big forest had down. What would you try to do? (look for other lumber where there were still plenty of trees) Wo go just anywhere where there were trees? (Point t in the mountains of the Far West.) What would be besides a source of lumber? (Discuss need for mark power.) Would lumbering be a good industry to star Minnesota in the 1850's? Show pupils a map of the States in 1850 and have them note the cities which growing up in plains areas south of Minnesota. As these cities need to import lumber? Why or why no might the growth of such cities lead to an increas of logs in Minnesota?

Say: We are now going to investigate the growth o lumbering industry in Minnesota. Before we do so, make some guesses about its growth. Where do you loggers would go first in Minnesota in order to cu How far back from rivers and streams could they go invention might make it possible for them to log a were much more distant from rivers? Suppose many companies began to cut trees. How could they keep their own logs if all of the companies used the sa to float logs down to St. Anthony and other saw mi

ıich emphasizes how rapids and
ıdrances to man's progress to
ıe film traces the development
Jnited States, from the small
uch modern projects as Niagara
vever, the film can be related
of St. Anthony Falls by the

Film: Water Power, 11 min., EBF.

nberman living in the eastern
the big forest had been cut
? (look for other places to
ienty of trees) Would you
re trees? (Point to places
.) What would be needed
cuss need for market and
d industry to start in
upils a map of the United
te the cities which were
of Minnesota. Ask: Would
ber? Why or why not? How
lead to an increased cutting

Borchert, Minnesota's Changing Geography, pp. 58-60.
Poatgieter and Dunn, Gopher Reader, pp. 232, 233 (picture), 234-236, 237-238, 250-252.
Ford, Minnesota, Past and Present, pp. 223-232.

igate the growth of the
. Before we do so, let's
vth. Where do you think
sota in order to cut grees?
reams could they go? What
for them to log areas which
ers? Suppose many logging
How could they keep track of
mpanies used the same rivers
ny and other saw mills?

Historical Statistics of the U.S. (map of 1850).

Hillbrand and Clark, Our Minnesota, ch. 18.

G. People in most societies of the world depend upon people who live in other communities for goods and services and for markets for their goods.

G. A number of factors -- climate, surface features, natural resources, and history -- affect settlement patterns.

G. Power for industry is obtained from a number of sources, including water power.

S. Sets up hypotheses.

G. Power for industry is obtained from a number of sources, including water power.

G. Some things can be produced better in one place than in another because of climate, resources, transportation routes, access to resources, access to markets, people's skills, etc.

5. Many logs were also floated down the Mississippi to meet the needs of people who had moved into the plains south of Minnesota. Some lumber was also shipped south to towns in other states.

6. After the coming of the railroads to the Twin Cities, lumber was also shipped to eastern cities.

7. For a time more lumber was cut in Minnesota than in any other state.

D. The settlers developed an important milling industry in the Twin Cities area. Minneapolis became the most important flour milling city in the country for some years. A number of factors led to the development of the flour milling industry in Minneapolis.

1. St. Anthony Falls provided a source of power for grinding wheat into flour.

2. The market for flour grew and so did the supply of wheat.

Now have pupils read different articles and books about
logging industry in Minnesota, including the article on
branding logs. (Do not have them read about the declin
the industry yet.) Afterwards, discuss their original
and let pupils decide which ones are supported by histo
data and which ones were wrong. Be sure to discuss the
ferent ways in which railroads affected the lumbering i
try in Minnesota and how lumbering affected Minneapolis

Perhaps show pictures of early sawmills in Minneapolis
in river close to the St. Anthony Falls.

29. On the chalkboard write figures to show the amount of l
ting in 1905 (about 2 billion feet) and the number of l
in just 3 northern counties in 1900 (15 to 20 thousand
mi, St. Louis, and Itasca). Ask: What prediction woul
about how important the lumber industry will be to Minn
another 50 years? Why? (Point out that they will chec
dictions later.)

30. Now say: You remember that the soldiers at the Fort bu
for grinding flour from wheat soon after the Fort was b
pose you had been an early settler and had obtained lan
the falls. You knew you could grind wheat but would yo
wanted to? What factors would you consider in deciding
or not to build a flour mill on your land?

Now read aloud a brief description of the soldiers' ear
action to the first wheat ground at the falls. Say: A
read, try to find out what there was about wheat grown
early area which made the earliest flour spoil easily.
did those who operated the mills overcome the problem?
Where did the ideas for the new process of flour millin

and books about the
g the article on
about the decline of
their original guesses
pported by historical
e to discuss the dif-
the lumbering indus-
cted Minneapolis.

in Minneapolis and logs
.

For pictures of logging, see Heilbron, Thirty-Second State, pp. 176-178.
For pictures of mills at St. Anthony, see pp. 68-69, 97 in Heilbron, Thirty-Second State; Anderson, Communities and Their Needs, pp. 52-53, 56-57.

the amount of lumber cut-
the number of lumberjacks
to 20 thousand in Beltra-
prediction would you make
will be to Minnesota after
t they will check their pre-

s at the Fort built a mill
r the Fort was built. Sup-
had obtained land around
eat but would you have
ider in deciding whether
nd?

For description, see Ford, Minnesota Past and Present, p. 53.

he soldiers' early re-
falls. Say: As you
out wheat grown in this
r spoil easily. How
me the problem?
of flour milling

G. People use their physical envi
ment in terms of their cultura
values, perceptions, and level
of technology.

G. People in most communities depend upon people who live in other communities and regions for goods and services and for markets for their goods.

a. As the population ~~of~~ the Twin Cities area grew, partly because of the lumbering industry, the demand for flour increased.

b. Flour could be shipped to southern markets by way of the Mississippi and to eastern markets after the coming of the railroads (and earlier via railroads from towns farther south on the Mississippi which were already on railroad lines).

c. The farmers who moved into southeastern Minnesota began to grow large quantities of wheat.

d. As farmers moved onto the prairies of Minnesota and the Red River Valley, they began to grow huge crops of wheat; much of it was shipped to Minneapolis via the Minnesota River and later on railroads which were built across the Mississippi River and into the western parts of the country.

3. Minneapolis gained an advantage over some of the flour mills in southern Minnesota for a number of reasons.

a. Men who had made fortunes in lumbering were ready to invest it in the new flour mills of Minneapolis.

b. Minneapolis millers brought in men who developed a new milling process come from? Where did the money for building the large flour mills come from? How important did flour milling become in the Twin Cities area? Why did Minneapolis become a more important flour milling center than towns in southern Minnesota which also had water power and were on rivers and were in the midst of the first wheat-growing area? Now have pupils read about the growth of the flour milling industry and what it was like in the 1870's and early 1880's. Then discuss the questions raised before the pupils began to read.

S. Sets up hypotheses.

S. Tests hypotheses against data.

G. People use their physical environment in terms of their cultural values, perceptions, and level of technology.

G. People in most communities depend upon people who live in other communities and regions for goods and services and markets for their goods.

S. Sets up hypotheses.

S. Tests hypotheses against data.

which could make better flour from the type of wheat grown in these northern areas.

c. Minneapolis' position at a railroad crossing of the Mississippi made it easier to ship in wheat and ship out flour to the eastern markets.

E. The population of the Twin Cities increased rapidly during the period from 1849 to 1880 in part because of the

31. Have pupils compare the map of changing agricultur
in Minnesota with a map of natural vegetation in M
Ask: Why do you think the people began to grow wh
southeastern wooded section of Minnesota before th
to grow it on the prairies west of the river along
nesota River? Let pupils make some guesses and th
them about the early reactions of Americans to the
of the prairies which did not grow trees. Also as
you think these farmers grew wheat rather than oth
Compare map with map showing agricultural use tod
did they grow wheat then but not today? Let pupil
guesses and then read Borchert's brief description
chose to grow wheat in the early days and why they
later.

Tell pupils that farmers in the Red River Valley b
duce tremendous quantities of wheat. Why would the
to Minneapolis rather than to some other city? Po
that wheat production in Minnesota grew from 2 mil
els in 1860 to 19 million bushels in 1870. How wou
growth affect Minneapolis?

32. Ask: What effect do you think the growth of the lu
dustry and the flour milling industry would have up
olis? upon St. Paul? Now have pupils examine figur
growth of population in these two cities from 1849

of changing agricultural frontiers
tural vegetation in Minnesota.
ople began to grow wheat in the
f Minnesota before they began
st of the river along the Min-
e some guesses and then tell
s of Americans to the fertility
grow trees. Also ask: Why do
wheat rather than other crops?
agricultural use today. Why
not today? Let pupils make some
t's brief description of why they
rly days and why they shifted

he Red River Valley began to pro-
wheat. Why would they ship it
some other city? Point out
esota grew from 2 million bush-
hels in 1870. How would this

k the growth of the lumbering in-
industry would have upon Minneap-
e pupils examine figures on the
two cities from 1849 until 1880.

Borchert, Minnesota's Changing Geography, map on p. 45, map on p. 24, and maps on pp. 39, 43, and 44. See description of farming on pp. 44-46.

G. Some things can be produced better in one place than in another because of climate, resources, transportation routes, access to resources, access to markets, people's skills, etc.

G. People use their physical environment in terms of their cultural values, perceptions, and level of technology.

S. Tests hypotheses against data.

S. Presents effective oral reports.

growth of the lumbering and flour industries. People came to the Twin Cities from eastern states and from Europe.

1. St. Paul had a population of 910 in 1849 and 41,000 in 1880.
2. St. Anthony had a population of 248 in 1849; Minneapolis (St. Anthony plus the new town which developed on the west side of the river) had a population of 46,000 in 1880.

F. The increase in population and the growth of the lumber and flour industries led to the development of many other kinds of industries and stores.

G. Although Minneapolis had grown rapidly, in 1880 it was still very small as compared to today, neighboring townships were very lightly populated, and places now part of Minneapolis were summer homes and recreation areas.

H. St. Paul had also grown rapidly from 1849 to 1880 but finally fell behind Minneapolis in population. It became a transportation

(See outline of contents). If possible, show the clas tures of St. Paul, Minneapolis, and St. Anthony in 185 Compare the sizes as indicated by these pictures. Als cuss: What do these pictures indicate about what life like in these towns at that time.

Ask: What other kinds of businesses do you think woul grow up in the Twin Cities area as a result of the gro of the lumbering and flour industries? As a result of increase in population? Let pupils set up hypotheses test against descriptions of some of the early busines which were related to the flour industry, to transport and providing other goods.

33. Say: St. Anthony and Minneapolis combined in one town By 1880 Minneapolis had a population of 46,000. How d this compare with the population of Minneapolis today? a pupil locate the 1960 population in an almanac. Com the two figures. What do pupils think living in Minne must have been like in 1880? Now show pupils pictures Minneapolis at that time and let them read description the town or sections of the town such as personal prop held in St. Anthony township, and of neighboring areas township and recreation areas.

34. Have the pupils who have been studying the growth of S Paul present their report at this time. Then have the examine their earlier hypotheses in the light of the d

ssible, show the class pic-
nd St. Anthony in 1857.
these pictures. Also dis-
icate about what life was

Folwell, History of Minnesota, vol. I, pictures opposite pages 362 and 430. Copies of the pictures can be obtained from the Minnesota Historical Society, St. Paul, Minn. A picture of Minneapolis in 1857 can be found in Anderson, Communities and Their Needs, p. 58. See "Readings" for description of Minneapolis businesses in 1880.

ses do you think would
s a result of the growth
ries? As a result of the
ls set up hypotheses and
of the early businesses
ndustry, to transportation,

combined in one town in 1872.
ion of 46,000. How does
of Minneapolis today? Have
n in an almanac. Compare
think living in Minneapolis
show pupils pictures of
them read descriptions of
such as personal property
of neighboring areas and

Almanac.
See "Readings" for descriptions of Minneapolis and townships in 1880. Pictures of Minneapolis in 1869, 1875, and 1889 can be found in Anderson, Communities and Their Needs, pp. 62-65. See also Heilbron.

dying the growth of St.
time. Then have the class
in the light of the data

S. Interprets line graphs. IV

S. Sets up hypotheses.

A. IS CURIOUS ABOUT SOCIAL DATA.

and wholesale center as well as a food processing center and a center for manufacturing shoes, clothes, and agricultural implements.

IV. We look at the Twin Cities today. It is the major manufacturing, trade, and financial center for the Upper Midwest region.

A. The Twin Cities continued to grow despite the decline of steamboats on the Mississippi, the decline of lumbering in Minnesota and the decline of flour milling in Minneapolis in terms of relative importance.

presented. (See activity 23). Discuss: Why did St. Paul finally fall behind Minneapolis in population?

35. Hold a summarizing discussion: What differences were there in the use of the Twin Cities area in 1650 and in 1850? Why did these differences occur? Which group (the Indians or the early white settlers) changed the physical environment more?

36. Say: We are now going to look at the Twin Cities today. Project a graph showing the decline of lumbering and flour milling in Minneapolis from 1860 to 1936. Be sure that you ask pupils questions to make sure that they understand how to read the graph before you ask the next questions. Then ask: What does this graph show us about what happened to lumber production in Minneapolis after 1860? after 1880? after 1900? What happened to flour production after 1880? When did flour production reach its height in Minneapolis? What has happened to flour production in Minneapolis since 1920? Did flour production drop as rapidly as lumber production? Say: This graph shows production only to the time of 1936. Do you think it looks as though flour production will continue to be of any importance in Minneapolis today?

Show the class a second chart showing trends in flour production in Minneapolis, Buffalo, Kansas City, and the United States as a whole from 1900 to 1936. Ask: What does this graph tell you about the importance of Minneapolis as a flour milling center? Has flour production increased much in the United States as a whole since 1900? Has it decreased much?

Now ask: What do you think may have caused the decline of flour production in Minneapolis? (Let pupils set up hypotheses to test later.) What do you think may have caused the closing of Minneapolis lumber mills? Do you think the lumbering which continues in northern Minnesota may have any effect on the Twin Cities today even though these cities have no more lumber mills? Why or why

S. Figures out way of testing hypotheses.

S. Works effectively with others. (Accepts his share of responsibility for the work of a group; participates actively without trying to dominate.)

not? (Let pupils set up hypotheses to test later.

Now say: Something else happened after the time th at St. Paul in 1880. You remember how important th boa were to the development of St. Paul. But the stopped coming to St. Paul. What do you think migh caused this to happen? Do you think the river wou to be of any importance for transportation to the (Let pupils set up hypotheses to test later.)

37. Say: We have set up a number of hypotheses about th decline of lumber milling, flour milling, and stea fic. What kinds of data can we use to check them? questions as needed to bring out possibilities of ical sources as well as types of data which might about present-day situation.)

Let pupils volunteer for groups which will study: for the decline of flour milling in Minneapolis, (status of flour milling companies in Minneapolis, cline of lumber milling in Minnesota, the present lumbering in Minnesota and any Twin Cities industr pend upon lumber or other timber products, (4) the the decline of steam boat traffic and the present river for transportation purposes. These groups sh variety of sources to check the hypotheses set up and should work out appropriate ways of presenting sions to the class. They might use role-playing (mill managers discussing the problems facing them about the decline of production; lumber mill owner whether or not they should close their plants, etc prepare bulletin board displays (e.g. Twin Cities which still use lumber or timber products as raw m reasons for the decline in steam boat traffic; the of barges on the river, etc.). Or they may wish to types of presentation. (Before pupils begin work, in which they can help make the group work product hypotheses to test later.)

happened after the time that we looked
u remember how important the steam
pment of St. Paul. But these boats
ul. What do you think might have
Do you think the river would continue
for transportation to the Twin Cities?
eses to test later.)

umber of hypotheses about the causes of the
g, flour milling, and steam boat traf-
can we use to check them? (Ask further
ring out possibilities of use of histor-
types of data which might be collected
ion.)

groups which will study: (1) reasons
milling in Minneapolis, (2) the present
companies in Minneapolis, (3) the de-
in Minnesota, the present status of
nd any Twin Cities industries which de-
r timber products, (4) the reasons for
t traffic and the present use of the
purposes. These groups should use a
eck the hypotheses set up by the class
opriate ways of presenting their conclu-
y might use role-playing (e.g. flour
the problems facing them which brought
duction; lumber mill owners deciding
ld close their plants, etc.). They might
isplays (e.g. Twin Cities industries
r timber products as raw materials; the
in steam boat traffic; the present use
etc.). Or they may wish to develop other
(Before pupils begin work, review ways
ake the group work productive.)

Sources of information and additional suggestions for committee preparation are listed in the activities providing for presentation of information.

S. Interprets line graphs.

S. Sets up hypotheses.

G. Some things can be produced better in one place than in another because of climate, resources, transportation routes, access to resources, access to markets, people's skills, etc.

G. The significance of location depends upon cultural developments both within and outside a country or region.

G. A change in situation brings about a corresponding change in the use of a site.

G. People in most societies of the world depend upon people who live in other communities, regions, and countries for goods and services and for markets for goods.

B. Ev
pr
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Mi
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1.

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s.

oduced bet-
in another
esources,
, access to
markets,

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de a country

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change in

ies of the
ple who
ties, re-
for goods
markets for

B. Even though Minneapolis no longer leads in flour production, the headquarters of the biggest flour milling companies are still located in Minneapolis, and the companies have diversified their products.

1. Minneapolis lost its dominance as other parts of the country built new flour mills, as farmers on the northern prairies stopped growing as much wheat, and as railroad rates changed.

2. Minneapolis mills have diversified their products and increased their total business even though flour production has declined.

38. Before the groups start to gather data, project on graph which shows the decline of lumber and flour Minneapolis. It also shows what happened to popul neapolis. Ask: What happened to the population o when lumber production began to fall? When flour gan to fall?

    Now have pupils look up the present population for and for St. Paul and compare these figures with th figures for the two cities in 1880. Ask: What ma this growth in population even though flour produc lumber milling disappeared, and steam boats disapp pupils set up hypotheses about possible reasons fo

39. Have the committee which has investigated causes o of flour milling production present its informatio in any form which it has selected to use.

40. The committee working on the current status of the industry should read various sources of informatio also write a letter to one of the large present-da panies such as General Mills or Pillsbury Mills an formation on the number of different products manu company. A committee member should prepare an ill

gather data, project once more the
ine of lumber and flour production in
s what happened to population in Min-
ened to the population of Minneapolis
an to fall? When flour production be-

e present population for Minneapolis
re these figures with the population
in 1880. Ask: What may have caused
even though flour production declined,
, and steam boats disappeared? Let
bout possible reasons for the growth.

as investigated causes of the decline
n present its information to the class
elected to use.

Borchert, Minnesota's Changing Geography, pp. 85, map on p. 83, and p. 125.
Blegen, Building Minnesota, pp. 267-268.

he current status of the flour-milling
us sources of information and should
of the large present-day milling com-
ls or Pillsbury Mills and request in-
different products manufactured by the
er should prepare an illustrated chart

Brink, The Twin Cities, pp. 41-42.
Gopher Historian, Spring, 1961, pp. 30-31.

. Diversification of production makes a company or a region less dependent upon price fluctuations for one product and upon the supply of specific resources.

. *Sets up hypotheses*.

3. Minneapolis remains the headquarters for most of the big milling companies in the country, even though the companies have built big mills in other cities.

to show the products produced. The letter shou
information about the source of the wheat used
olis branch of the firm, how this wheat is brou
olis, the yearly production of flour, the locat
major markets, and how the products are shipped
Committee members should prepare a map showing
and major markets for products. The committee
the rest of its information in any way which it
appropriate.

Afterwards discuss: Are the milling companies
or worse off than they were when Minneapolis le
tion? Why? (Total business is larger today be
fication.)

41. If the committee does not use any pictures of t
flour mills and grain elevators,. the teacher ma
Use a map to help pupils identify where these m
located. Perhaps project the picture showing t
the canal which formerly supplied power to one
What kind of power was supplied throught this s
you think now supplies most of the power if wat
longer so important?

. The letter should also request
of the wheat used by the Minneap-
this wheat is brought to Minneap-
f flour, the location of the firm's
oducts are shipped to these markets.
are a map showing sources of wheat
s. The committee should present
n any way which its members think

milling companies better off today
hen Minneapolis led in flour produc-
s larger today because of diversi-

any pictures of the present-day
s,. the teacher may wish to do so.
ify where these mills are now
picture showing the entrance to
ied power to one flour mill. Ask:
ed throught this source? What do
the power if water power is no

A picture of the mills beside the river and one picture of Minneapolis grain elevators can be found in Szarkowski, The Face of Minnesota, pp. 238, 240.
Pictures of grain elevators and of the entrance to the canal which formerly supplied water power for a mill can be found in Bergman, Minnesota in Pictures.

A. IS SCEPTICAL OF THEORIES OF SINGLE CAUSATION IN THE SOCIAL SCIENCES.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. Some things can be produced better in one place than another because of climate, resources, transportation routes, access to resources, access to markets, people's skills, etc.

G. Man changes the character of the earth.

G. Forests can be used to obtain lumber and other timber products.

G. People in most societies depend upon people who live in other communities and regions for goods and services and for markets for their goods.

G. The significance of location depends upon cultural developments both within and outside a country or region.

G. A change in situation brings about a corresponding change in the use of a site.

C. Minneapolis has no lumber mills but both Minneapolis and St. Paul still use some products coming from the forests of northern Minnesota.

1. Lumber mills disappeared in Minneapolis after the major northern forests had been cut over.

2. Today logging is still found in northern Minnesota where trees have again grown up into forests; some of the forests have been put on a sustained yield basis.

    a. The lumber provides pulp for paper mills; many of the mills specialize in high quality paper which has a national market.

    b. The forests also provide lumber and wood for various kinds of wood-working industries and for construction.

3. Minneapolis and St. Paul use paper produced

42. Have each pupil prepare a chart in which he ide
natural features of the physical environment wh
[illegible] of the flour milling industry in Mi
human factors which affected its development.
then write a summarizing statement about the re
of natural physical features and human factors
the flour milling industry in Minneapolis.

43. The committee investigating the reasons for the
mills in Minneapolis and the possible effects o
northern forests upon the Twin Cities today sho
things besides reading from different sources o

a. They should write to one of the Twin Cities
find out its source of paper, and how the pa
to the firm. They should also ask where its
outside of the Twin Cities area. The commit
a map to show the source of paper and the ma
paper.

b. They should look in the St. Paul and Minneap
directory yellow pages to find out how many
and/or sell paper products, manufacture wood
lumber, manufacture furniture, or are engaged
publishing. The committee should select sev
of each type and write letters to them to fi
source of paper or wood and (2) if the firm
ing firm, where it sells its products. The
prepare maps to show this information.

in which he identifies those
l environment which affected the
g industry in Minneapolis and the
s development. Each pupil should
ent about the relative importance
d human factors in the history of
inneapolis.

reasons for the loss of lumber
ssible effects of logging in
Cities today should do several
ferent sources of information.

the Twin Cities newspapers to
, and how the paper is transported
so ask where its newspaper is sold
rea. The committee might prepare
paper and the market for the news-

Paul and Minneapolis telephone
nd out how many companies make
manufacture wood products, sell
, or are engaged in printing and
hould select several companies
rs to them to find out (1) their
(2) if the firm is a manufactur-
products. The committee might
formation.

Borchert, Minnesota's Changing Geography, pp. 60-63.

Poatgieter and Dunn, Gopher Historian, Spring, 1960, pp. 30-32 (on paper, printing, publishing, and wood-working industries in St. Paul.)

Gopher Historian, Spring, 1961, pp. 32-33 (on printing and publishing in Minneapolis and other Minneapolis firms using wood products.)

S. Gains information by studying pictures.

G. New technological developments bring improved efficiency.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. Machinery and power make possible greater production per person (including greater capacity for moving people and goods).

in northern Minnesota and use some of the trees cut there in construction and wood-working industries.

a. St. Paul is one of the largest publishing and printing centers in the country.

b. There are various wood-working industries which produce such things as classroom furniture, barrels, packing boxes and crates, skis, wooden toys, puzzles, treated posts, etc. However, much of the lumber is imported from other states.

D. The Twin Cities are still a transportation center, even though the old steamboats disappeared on the river.

1. The old steamboats disappeared as railroads were built and provided cheaper and more direct transportation.

The committee should present the rest
way it considers appropriate. Afterw
tent is the lumbering industry in Min
Twin Cities area today?

44. If the committee does not use photogr
the lumbering activities in Minnesota
and to ask pupils to compare present
those of the 1880's. (Note such thin
logs are transported, type of machine
logs are used, etc.)

45. The committee investigating the use o
portation should write to the U.S. Ar
Paul, Minnesota district for informat
Falls Upper Harbor Project and about
Nine-Foot Channel. (A 1962 leaflet on
graph showing types of products carri
of products shipped to and out of the
the comparative loads carried by barg

he rest of its information in any
Afterwards discuss: To what ex-
y in Minnesota important to the

photographs to illustrate some of
innesota, you may wish to show some
present lumbering operations with
ich things as size of logs, how
machinery used, purposes for which

Pictures of lumber mill and machine and of logs in rivers can be found in Bergman, Minnesota in Pictures. (Pictures show the size of the logs.) Pictures of logs and paper mill can be found in Szarkowski, The Face of Minnesota, pp. 83, 86-87, 89.

e use of the Mississippi for trans-
U.S. Army Corps of Engineers, St.
nformation about the St. Anthony
about the Upper Mississippi River
aflet on the channel includes a
s carried, as well as a description
of the Twin Cities by barge and
by barge and the old steam boats.)

Gopher Historian, Spring, 1961, pp. 19-23.
Borchert, Minnesota's Changing Geography, pp. 130-132.

G. Inland water routes provide
cheaper transportation for
heavy goods than do railroad
trucks, or planes.

G. People in most societies dep
upon other people who live i
other communities and region
for goods and services and f
markets for their goods.

G. Man changes the character of
the earth.

G. Towns need means of shipping
goods in and out; they are
likely to grow up where tran
portation is good, particula
ly where different types of
transportation meet.

S. Interprets map symbols in te
of map legend.

S. Sets up hypotheses.

2. Barge traffic has increased rapidly in recent years, and the new upper harbor in Minneapolis makes it possible for barges to land above the St. Anthony Falls.

    a. Barges can carry much heavier loads than the old steam boats carried.

    b. The types of goods shipped by barge are those which are heavy and so cost a good deal to ship by rail or truck as compared to the price of the goods.

    c. More goods are shipped into the Twin Cities area by barge than are shipped out of the Twin Cities by barge. This is because of the kinds of goods produced for sale in other markets by the Twin Cities area as well as the location of the markets.

    d. Barge traffic has increased greatly since the work on the nine-foot channel on the upper Mississippi; the Upper Harbor project may bring changes for Minneapolis.

3. The Twin Cities have become an important railroad center; passenger traffic is declining as autos and planes increase in number, but railroads continue to transport many goods.

    a. Railroads have made it easier to bring in raw materials and finished products to those needing them in the Twin Cities and to ship out goods to other parts of the country. They have made it possible for

The committee should present its informatio
of steam boats and on the present use of th
discuss: What factors affect which kinds o
barge rather than by railroad or truck? Wh
shipped by barge into the Twin Cities than
when it should be easier to go downstream b
against the current? How has man changed h
ment to improve river transportation in thi

46. Show pupils a map of railroads in the Unite
any major railroad lines go through Minneap
west coast with eastern cities? Do any maj
nect Minneapolis with southern and central
tant does Minneapolis seem to be as compare
road hubs in the country?

Now show pupils a map of railroads in Minnes
do the Twin Cities have over other Minnesota
railroad transportation? Ask pupils to note
going through the cities. Ask: Why is it

n both on the decline
e river. Afterwards
f goods are shipped by
y are more goods
out of the Twin Cities
y barge than upstream
is physical environ-
s area?

Leaflets from the U.S. Army Corps of Engineers, St. Paul District Office.

For pictures, see; Bergman, Minnesota in Pictures; Szarkowski, The Face of Minnesota, pp. 38, 43; Hillbrand and Clark, Our Minnesota, p. 206.

d States. Ask: Do
olis to connect the
or railroad lines con-
cities? How impor-
d with some other rail-

Goode's World Atlas, Or see map in Deasey, et. al., The World's Nations, p. 25.

sota. What advantages
a cities in terms of
e the number of lines
important to the cities

Borchert, Minnesota's Changing Geography, p. 92 (map).

S. Applies previously-learned concepts and generalizations to new data.

G. Cities which become big trading centers tend to grow up where there is a break in transportation and so where goods must be moved from one type of transportation to another or from one company's transportation facilities to those of another company (as on railroads).

S. Tests hypotheses against data.

S. Sets up hypotheses.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

Twin Cities industries to gain wider markets.

b. The location on a railroad hub which also meets the head of navigation on the Mississippi has made the Twin Cities an important wholesale distribution center for the Upper Midwest.

c. Many goods are transferred from barges or railroad to trucks for distribution; railroad cars are shunted back and forth in the St. Paul yards onto track which will take them to their destination. Such jobs require many workers and warehouses.

d. Workers and shops are also needed to take care of repair and maintenance of railroad cars and engines.

that railroads of different companies anc
directions meet in the Twin Cities?

47. Perhaps project illustrations which show
tions of the Twin Cities. Or have pupils
Borchert which describe the railroad acti
Have pupils check the hypotheses they set
this data.

48. If pupils live in the Twin Cities area, c
what has happened to passenger traffic ar
to and out of the Twin Cities in recent y
what the railroad men think is responsibl

If pupils do not live in the Twin Cities
road traffic has declined in recent years
it has declined even though the Twin Citi
tion and their industries have been growi
transport might have taken over some of t

and coming from different

Steinhauser, Geography in the General College (map on p. 8 of article by Borchert on "The Transport Industry."

how the busy railroad sec-
pils read the sections in
activity in the cities.
set up in activity 46 against

Borchert, Minnesota's Changing Geography, pp. 122-123, 125-126, 128-130.

a, one of them might find out
c and to freight traffic in-
nt years. He should find out
sible for changes.

ies area, tell them that rail-
ears. Ask: Why do you think
Cities have grown in popula-
rowing? What other types of
of the traffic which former-

S. Interprets map symbols in term
of legend.

G. Towns need means of shipping
goods in and out; they are lik
ly to grow up where transporta
tion is good, particulariy whe
different types of transporta-
tion meet.

G. A number of factors -- climate
surface features, natural re-
sources, accessability, and hi
tory -- affect settlement pat-
terns.

G. Man uses his physical environ-
ment in terms of his cultural
values, perceptions, and level
of technology.

G. Factories need good transporta
tion facilities, but cities wi
many factories and large numbe
of people also attract improve
transportation facilities.

G. The significance of location d
pends upon cultural developmen
both within and outside a coun
or region.

S. Draws inferences from a compar
son of different map patterns

4. The Twin Cities have become an important highway hub. Many highways cross each other in the area and the Twin Cities are on an important east-west federal highway.

   a. Autos now transport many passengers who formerly would have travelled by train.

   b. Trucks are becoming more and more important as a means of transporting goods; they are taking much traffic away from the railroads as well as providing a means of moving goods within the Twin Cities area.

   c. Autos and highways have been an important factor in the growth of suburbs and the metropolitan area.

ly went by railroad? (Compare change to t
on steamboats as a result of railroads com

49. Now show pupils a map of major highways in
highway traffic in Minnesota. Does Minnea
tage in terms of its location in relation
you think the highways may have affected t
If so, how? Why do you think the highways
of these connections in the Twin Cities ar

A pupil might check the yellow pages of ei
St. Paul telephone directory and count the
panies which will carry freight between ci

Now show pupils a map of the Twin Cities a
World War II and have them compare it with
day Twin Cities. What has happened in thi
might account for the changes? Have sever
class' ideas by reading Borchert's expl
suburbs. Have pupils examine maps more cl
lation growth has extended out unevenly.
these directions rather than evenly all ar
What problems has the move to the suburbs
ies? How has man changed the area?

pare change to that which came about
of railroads coming into the area.)

ajor highways in the United states or
ta. Does Minneapolis have any advan-
ion in relation to major highways? Do
have affected the Twin Cities growth?
ink the highways were built to make all
e Twin Cities area?

Map on p. 8 of Borchert's article on "The Transport Industry," in F. Steinhauser, Geography in the General College.

llow pages of either the Minneapolis or
ry and count the number of trucking com-
eight between cities.

he Twin Cities area and suburbs prior to
compare it with a map of the present-
happened in this period of time? What
ges? Have several pupils check on the
Borchert's explanation of the growth of
ine maps more closely to note how popu-
out unevenly. Why has it extended in
an evenly all around the Twin Cities?
to the suburbs created for the two cit-
the area?

Map of growth and transportation routes in Borchert, Minnesota's Changing Geography, p. 116. See description of suburban growth on pp. 145-151, 154.

the same area.

G. Man changes the character of the earth.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. Factories need good transportation but cities with may factories and large numbers of people also attract improved transportation facilities.

G. Machinery and power make possible greater production per person (including capacity to move people and goods).

he Twin Cities have become an important
irline center.

he most recent means of transporting goods
o the Twin Cities area is by pipeline for
atural gas and oil.

50. Show pupils a map of airline routes across the United S
What parts of the country are connected with the Twin C
airline routes?

Now have a pupil check a telephone directory yellow pag
to find out what airlines fly into the Twin Cities. He
tell the class about his findings.

Another pupil might write to Northwest Airlines which
major offices in the Twin Cities. He should ask about
mount of air traffic in passengers, in air freight, and
how the air traffic has grown in the last twenty years.

Discuss: How important do you think airlines are to th
Cities? Why? What kinds of goods might be transported
rather than by trucks or railroads? Or have several pu
pare a bulletin board display on importance and types o
traffic.

51. Have a pupil investigate the use of pipe lines to trans
ural gas and oil. He should explain to the class how t
lines are used. Then show the class a map of major pip
Minnesota. How do the Twin Cities fit into this patter
lines? How might pipelines affect other kinds of tran
in the long run?

52. Have each pupil prepare a chart on "Transportation Chan
Twin Cities From 1880 to the Present Day." In the left
he should show the changes which have taken place. In

s across the United States. Ask:
nected with the Twin Cities by

Borchert, *Minnesota's Changing Geography*, pp. 151-153. Map in *Goode's World Atlas*.

directory yellow pages section
the Twin Cities. He should

hwest Airlines which has its
He should ask about the a-
, in air freight, and about
he last twenty years.

nk airlines are to the Twin
might be transported by air
? Or have several pupils pre-
mportance and types of air

f pipe lines to transport nat-
in to the class how the pipe-
ss a map of major pipelines in
fit into this pattern of pipe-
t other kinds of transportation

Encyclopedias. Steinhauser, *Geography in General College* (map on p. 8 of Borchert's article on "The Transportation Industry")

"Transportation Changes in the
nt Day." In the left-hand column
ave taken place. In a second

G. Factories need good transportation facilities, but cities with many factories and large numbers of people also attract improved transportation facilities.

G. Towns need means of shipping goods in and out; they are likely to grow up where transportation is good, particularly where different types of transportation meet.

G. Improved transportation facilities make possible wider and bigger markets for goods as well as better and less costly access to raw material.

G. Cities which become big trading centers tend to grow up where there is a break in transportation and so where goods must be moved from one type of transportation to another or from one company's transportation facilities to those of another company (as on railroads).

G. The significance of location depends upon cultural developments both within and outside a country or region.

A. IS SCEPTICAL OF THEORIES OF SINGLE CAUSATION IN THE SOCIAL SCIENCES.

column he should indicate reasons for the changes, and in a third column he should indicate effects of the changes. At the bottom of his chart he should write a sentence or two to explain the effects on the area of having breaks in transportation in the Twin Cities area.

After the charts are completed, discuss: How have railroads, autos, planes and pipelines changed the importance of the Twin Cities location?

. Factories must have some form of power to run machinery.

G. Power for industry is obtained from a number of sources including water power, or steam and electricity produced by burning coal

S. Applies previously-learned concepts and generalizations to new data.

G. Since coal is very bulky and so costly to transport except by water, most plants which use coal to make electricity are located near the source of coal or in a port city near the place at which the coal is unloaded from boats.

G. A number of factors -- climate, surface features, natural resources, accessibility, and history -- affect settlement patterns.

S. Tests hypotheses against data.

E. Water power [illegible] no longer so important in the Twin Cities area; most of the power now comes from electricity produced with coal.

F. A look at the Twin Cities today indicates that many factors have affected their growth besides the development of new types of transportation, new sources of power, and diversification within the old flour-milling companies.

53. Remind pupils of the picture which they s
provide water power to a flour mill in Mi
pupils set up hypotheses about other poss
which might have replaced the water power
would the Twin Cities need to develop oth
(need more power than can be provided by
dustries too far from falls) Also remind
coal which is shipped into the Twin Citie
live in the Twin Cities area, ask: How m
heat their homes with coal furnaces? Wha
use?) Ask: Why do you think so much coa
area when most people do not use it for h

Now tell pupils that most of the power us
area is electricity produced by burning c
investigate the way in which electricity
If pupils live in the Twin Cities area the
of the Northern States Power Company to f
power is produced in the cities today ar
cated where it is. If pupils do not live
them a picture of the plant and point out
sissippi River. Ask: Why do you think i
the river?

54. Now have each pupil prepare a chart. On
should indicate the factors which brought
Twin Cities until 1880. On the other si
he should indicate what has happened to e
terms of its importance to the present-

Say: We have found that most of the fact
the growth of the Twin Cities before 188
Earlier you suggested a number of reasons
gained population even though these facto
Let's look at that list again. (See acti
cross off any of the reasons from the lis
studied more, do you wish to add any rea

which they saw the old channel to
our mill in Minneapolis. At that time
out other possible sources of power
he water power for the mills. Why
to develop other sources of power?
e provided by these falls -- many in-
Also remind pupils of the amount of
the Twin Cities by barge. (If pupils
a, ask: How many of your families
furnaces? What kind of heat do you
nk so much coal is brought into the
t use it for heat anymore?

f the power used in the Twin Cities
d by burning coal. Or let a pupil
h electricity is produced from coal.
Cities area they might visit the area
r Company to find out more about how
ties today and why the plant is lo-
ls do not live in the area, show
and point out that it is on the Mis-
do you think it would be located on

For picture, see
Bergman, Minnesota
in Pictures.

a chart. On one side of the paper he
which brought about the growth of the
the other side in an opposite column,
happened to each of these factors in
o the present-day Twin Cities area.

st of the factors which helped lead to
es before 1880 are no longer so important
ber of reasons why the cities might have
gh these factors declined in importance.
in. (See activity 38.) Do we need to
s from the list? Now that we have
o add any reasons to the list? (If

S. Interprets bar graphs.

G. Cities usually have a greater division of labor and specialization than small towns or farm areas.

S. Applies previously-learned concepts and generalizations to new data.

aphs.

ve a greater
and special-
l towns or

/-learned
ralizations

1. About one fourth of the people working in the Twin Cities are working in manufacturing firms; the othersare working in many different kinds of occupations.

2. The Twin Cities have many factories other than those using flour or timber products. Some of the industries had their beginnings

someone suggest new developments in transportation, list but ask: Do you think such developments would explain the growth? What else would be necessary tc such growth?)

Now say: Let's look at the modern Twin Cities more We should try to find out whether the reasons you ha are good ones. Perhaps data on how people who work Cities area earn their living will give us some he to find out what has led to the growth of the citie

55. Show the class a bar graph which you have construct following data about how those working in the Twin earned their living. (25% were in manufacturing; 2 in trade -- wholesale and retail; 16% were providin services as doctors, lawyers, teachers, etc.; 8% we transportation and communication; 6% were working i surance, and real estate; 5% were working in constr working in other services; 5% were working for the 6% were working in miscellaneous occupations.)

Ask: What kinds of occupations are most common in What does this graph tell you about what kind of bu could expect to find if you made a tour of the Twin does this break-down of occupations compare with wh was the probable breakdown of occupations in the 18 think as large a percentage work in manufacturing? occupations do you think have a larger percent work day?) How does the breakdown compare with what you a small town? Why? Do any of these occupations gi about what factors may have led to the growth of th

56. If pupils live in the Twin Cities area, let them re of factories which some of them investigated in gra kinds of products are produced in the Twin Cities? produced there?

s in transportation, add it to the
h developments would be enough to
would be necessary to bring about

ern Twin Cities more carefully now.
er the reasons you have suggested
how people who work in the Twin
ill give us some help in trying
growth of the cities.

h you have constructed to show the
working in the Twin Cities in 1960
in manufacturing; 21% were working
l; 16% were providing professional
eachers, etc.; 8% were working in
n; 6% were working in banking, in-
re working in construction; 8% were
ere working for the government; and
s occupations.)

are most common in the Twin Cities?
bout what kind of buildings you
e a tour of the Twin Cities? How
ions compare with what you think
ccupations in the 1880's? (Do you
k in manufacturing? in trade? Which
larger percent working in them to-
ompare with what you would find in
these occupations give you any ideas
to the growth of the Twin Cities?

es area, let them review the kinds
investigated in grade four. What
in the Twin Cities? Why are they

For a discussion of types of production, see Borchert, Minnesota's Changing

G. Some things can be produced better in one place than in another because of climate, resources, access to markets, people's skills, etc.

G. New inventions and discoveries open up new fields of production.

G. The people who live in one community depend upon each other for different goods and services and for markets for their goods.

d

a

b

c

d

e.

f.

g.

h.

rod
n i ther
resources,
eople's

iscov ies
f produc-

in one com-
ach other
nd services
their goods.

in the Twin Cities before 1890; others have developed since then, some quite recently.

a. Brewing companies have expanded since 1880.

b. Some companies specialize in products for farmers, such as seeds and farm machinery.

c. Some companies specialize in metal work such as the manufacture of sheet metal and metal tools, the production of cans for food, etc.

d. Some companies specialize in materials needed for building construction such as roofing materials, cement, and paint or in construction machinery such as road building equipment and derricks.

e. Some companies produce electronic devices such as automatic heating devices and computers.

f. One company is the world's largest producer of various kinds of adhesives and also produces office copying machines.

g. Some companies produce durable consumer goods such as washing machines, refrigerators, automobiles, snowplows, lawn mowers, furnaces, home furnishings, etc.

h. Some companies specialize in the manufacture of clothing such as furs, undergarments.

If pupils do not live in the Twin Cities, have a committee assume the role of members of an advertising committee for the Minneapolis and St. Paul Chambers of Commerce. They should prepare a written leaflet advertising the many important factory products in the Twin Cities area, or they might prepare a bulletin board and table display of some of the major products from the Twin Cities. Perhaps also show the class pictures of some of the factories to indicate something of their size.

Geography, pp. 120-121, 128, 134-137. Also see beginning of part three of the background paper by Steinhauser. Pupils may also wish to consult the Minnesota Directory of Manufacturers.

For pictures, see Szarkowski, The Face of Minnesota.

G. The significance of locatior
pends upon cultural developn
both within and outside of a
country or region.

G. A change in situation brings
bout a corresponding change
the use of a site.

G. Man uses his physical envirc
ment in terms of his cultura
values, perceptions, and lev
of technology.

G. Improved transportation faci
ties make possible wider anc
ger markets for goods as wel
better and less costly acces
resources.

S. Applies previously-learned c
cepts and generalizations to
new data.

G. The significance of locatior
depends upon cultural develc
ments both within and outsic
a country or region.

i. There are also many other kinds of factories in the Twin Cities.

3. Outside of but close to the Twin Cities are two other important types of industry plus many smaller ones.

   a. The stockyards have moved south along the river to South St. Paul

      1) The stockyards moved from close to the center of St. Paul where they were located in 1855 to a southern suburb for a number of reasons.

      2) New inventions such as railroads, trucks, and refrigerated box cars have helped bring about the growth of the stockyards, since they have opened up new markets.

      3) Changes in American eating habits and the increase in population in this country have also led to bigger markets for meat products.

      4) The livestock processing industry got its impetus in Minnesota when farmers in the southern part of the state shifted from wheat raising to the production of corn and the raising of beef cattle and hogs.

57. Ask: Where were the stockyards located in St. P
(Review from group report on St. Paul.) If neces
the advertisement which appeared in 1855 and hav
the place where the stockyards were then situate
Now show a recent picture of downtown St. Paul.
locate this stockyard in the present-day downtow
(Obviously this stockyard is no longer in existe
following questions would seem appropriate in or
the idea of the effect of changing technology on
of an area: Why is this location no longer a "g
for such a business enterprise? Why was it once
cation? (proximity to the trading area and clos
area of the Mississippi, the main source of supp
pupils where the present-day stockyards of the
are located. (in South St. Paul) Ask: What inv
their location and growth in South St. Paul poss
roads, later trucks, refrigerated box cars.) Wh
would the growing population in the U.S. have up
development? What effect would shifts in eating
less bread and more meat have upon the stockyard

58. Say: A little earlier we found out that flour m
affected by shifts in farm production in Minneso
1900. What did the maps we looked at show about
to the kinds of things produced on farms in sout
west central Minnesota after 1930? (If necessar
look at the maps in Borchert once again.) How m
shift from wheat to corn, beef cattle and hogs a
stockyards in the St. Paul area? Why do you thi

ds located in St. Paul in the 1850's?
St. Paul.) If necessary read aloud
red in 1855 and have pupils locate
s were then situated. (Use a map)
downtown St. Paul. Ask: Can you
present-day downtown area?
no longer in existence.) The
m appropriate in order to develop
nging technology on the business
tion no longer a "good location"
e? Why was it once an ideal lo-
ading area and close to the docking
main source of supply) Now show
stockyards of the Twin Cities area
ul) Ask: What inventions made
South St. Paul possible? (rail-
ated box cars.) What effect
in the U.S. have upon their
ld shifts in eating habits to
upon the stockyards?

nd out that flour milling was
oduction in Minnesota around
ooked at show about what happened
ed on farms in southern and
1930? (If necessary have pupils
once again.) How might this
f cattle and hogs affect the
ea? Why do you think the stock-

Borchert, Minn.'s
Changing Geogra-
phy. See maps on
pp. 43 and 83
and description
of source of an-
imals for stock-
yards on p. 132.

yards expanded in South St. Paul rather than in on
Minneapolis suburbs? (Identify source of animals.

59. Have a pupil report on the drainage of wet areas i
sota's southern prairies and the effects upon corn
stock production. Ask: What effect would these a
to change the land have upon the South St. Paul st

60. Have a committee prepare a bulletin board display
day by-products of the meat packing industry from
which were formerly considered waste products. The
should emphasize not only some of the products but
scientific research which makes such products poss

61. Show pupils a picture of an oil refinery south of
Paul or locate some of the refineries on the map.
that pupils understand what an oil refinery does.
Do we produce any crude oil in Minnesota? Where c
refineries get their oil? How would it be transpo
is it profitable to build refineries in this distr
from the source of oil? Perhaps have pupils read
description of the refineries to check on some of

rather than in one of the
ource of animals.)

ge of wet areas in Minne-
effects upon corn and live-
ect would these activities
South St. Paul stockyards?

Borchert, Minnesota's Changing Geography, pp. 49-50.

in board display on present-
ng industry from materials
ste products. The display
t the products but the
uch products possible.

efinery south of South St.
ries on the map. Make sure
l refinery does. Then ask:
nnesota? Where can these
uld it be transported? Why
ies in this district so far
have pupils read Borchert's
check on some of their guesses.

For a description of oil refineries, see Borchert, Minnesota's Changing Geography, pp. 112-113. See pp. 132-133 for those south of St. Paul.

G. Some things can be produced bet
ter in one place than in anothe
because of climate, resources
(including cheap land), transpo
tation routes, access to resour
access to markets, people's ski
etc.

G. The growth of factories in a to
attract people, stores, etc. whi
in turn make the area more attr
tive to new factories and
stimulate the growth of old one

G. A number of factors -- climate,
surface features, accessability
and history -- affect settlemen
patterns.

G. A place needs cheap and rapid
transportation in order to carr
on much trade with other places

S. Gains information by studying pictures.

G. Cities usually have a greater
division of labor and speciali-
zation than small towns or farm-
ing areas.

G. The growth of factories in a to
attract more people, stores, et
which in turn make the area mor
attractive to new factories and

c. Many other industries have spread into some of the Twin Cities suburbs for a variety of reasons including less expensive land on which to build.

4. The growth of industry is affected by the growth of population, other commercial enterprises, transportation routes, etc, and in turn helps stimulate increased population growth, new non-manufacturing enterprises, increased transportation facilities, more schools and hospitals, etc., and an increase in the number of people providing professional services.

a. The Twin Cities are one of the largest wholesale trading centers in the country. They have many warehouses and wholesale offices.

b. As in any large urban center, the Twin Cities have many retail stores of a variety of types; these are much more dispersed than formerly.

c. The Twin Cities have many office buildings which house doctors, dentists, law-

62. If pupils live in the Twin Cities area, have them
some of the other industrial plants in some of the
Perhaps arrange a field trip to one of them to fin
what is produced, how it is produced, and why it i
in this region and more specifically in this subur

63. Have the class summarize what they have learned so
factors stimulating industrial growth in the Twin
Ask questions as needed to make sure that they und
the increase in population and in other kinds of c
enterprises or even non-commercial enterprises suc
growth of colleges and universities can stimulate
production in an area.

Now ask: What effect would the growth of all of t
dustries in the Twin Cities area have upon the are
more specific questions as needed to bring out eff
population, other commercial activity, etc.) Say:
now going to look at the Twin Cities to try to ide
of these other developments.

64. Show pictures of downtown St. Paul and Minneapolis
both air views and closeup views of stores and b
As each picture is shown have pupils make a list o
of activities which can be identified (e.g. types
services provided, etc.) Ask: What do these pict
about kinds of activities carried on in these citi
such activities changed since 1880? What has caus
How has the development of each of these activitie
the Twin Cities?

, have them identify
some of the suburbs.
them to find out
and why it is produced
n this suburb.

e learned so far about
in the Twin Cities area.
hat they understand how
r kinds of commercial
erprises such as the
n stimulate industrial

of all of these in-
upon the area? (Ask
ring out effects upon
etc.) Say: We are
o try to identify some

Minneapolis. Include
stores and buildings.
ake a list of the kinds
(e.g. types of businesses,
o these pictures tell us
n these cities? How have
hat has caused the change?
se activities affected

Szarkowski, Face of Minnesota, pp. 171-172.
Bergman, Minnesota in Pictures.
Borchert, Minnesota's Changing Geography, pp. 117-118.
Gopher Historian, Spring, 1961, pp. 30-36, 27-28.

stimulate the growth of old ones.

S. Applies previously-learned concepts and generalizations to new data.

G. Different parts of a city usually have different but interrelated functions.

yers, etc. as well as business offices.

d. The Twin Cities have many construction firms and real estate companies.

e. The Twin Cities have many banks to serve the general population and the business firms.

f. The Twin Cities have many hotels, restaurants, laundries, etc. to provide services for both the city dwellers and visitors to the cities.

g. The Twin Cities have many schools to serve the different sections of the cities.

h. The Twin Cities have a number of colleges and a large state university.

i. St. Paul is the capital of the state and so has a number of government buildings and many government workers.

j. The number of houses and apartment buildings has increased tremendously since 1880.

5. The Twin Cities and the surrounding suburbs can be regionalized according to types of buildings and functions.

   a. The building of warehouses and factories has tended to follow main transportation facilities; certain parts of the city have many factories and warehouses.

Now have pupils read Borchert's description of the area. They can skip over the sections dealing with duction, since they have already studied this topic not have enough copies of Borchert's textbook, you of the following:

a. Let committees present illustrated talks, using pictures, to show different kinds of activity ot factory production. (This activity would be par appropriate for pupils who do not live in the Tw area.)

b. Read aloud brief descriptions from Borchert abou things which pupils are looking at in pictures a

65. Now ask: What have you noticed about the location industries and types of businesses? Are they sprea throughout the cities? Why not? How could we regi Cities and its suburbs? (Let pupils use maps and p and material in Borchert to help them after they ha criteria for identifying regions.)

Story of Minneapolis in Pictures, pp. 25-31, 40-41.

Gopher Historian, Spring, 1960, pp. 30-37.

escription of the Twin Cities
tions dealing with factory pro-
studied this topic. If you do
t's textbook, you might do one

Borchert, Minnesota's Changing Geography, pp. 114-145.

ated talks, using a map and
nds of activity other than
ivity would be particularly
not live in the Twin Cities

from Borchert about some of the
g at in pictures and maps.

bout the location of different
? Are they spread evenly
How could we regionalize the Twin
ls use maps and photographs
hem after they have set up
)

Borchert, Minnesota's Changing Geography, ppl 114-153.

S. Gains information by observing the world around him.

S. Gains information by studying pictures.

b. Some parts of the city are devoted largely to office buildings and large stores.

c. Smaller stores and shopping centers are now dispersed close to residential areas.

d. Residential areas differ greatly in terms of type and age of buildings, value of the buildings and rental costs, and people's ideas about their desirability as a place to live. Residential areas have shifted over the years.

66. If pupils live in the Twin Cities area, tak
trip of the Twin Cities. Before pupils go
maps showing the proposed route of the buse
will stop. Let them list differences which
different places on this trip. Then use ar
the trip to call attention of pupils to th
along the route and to make sure that pupi
at any spot where they stop to look around
activity should help pupils review what the
all of the eras they have studied.

67. Instead of the field trip or perhaps in add
film The Minnesota Story. This film featu
sota through the use of old paintings and
tion is well done and even though a bit di
fifth grader, it does present a sequential
state and its industries. Or perhaps show
...Fur Trade to Space Age and Minneapolis

Cities area, take the class on a field
efore pupils go on the trip, give them
oute of the buses and places where they
ifferences which they expect to find in
ip. Then use an electric megaphone on
of pupils to things as the bus travels
sure that pupils can hear what is said
to look around more carefully. This
review what they have learned about
tudied.

See appendix for details of field trip.

r perhaps in addition to it, show the
This film features a history of Minne-
paintings and photographs. The narra-
though a bit difficult for the average
nt a sequential development of our
Or perhaps show two films: Saint Paul
nd Minneapolis Story.

Film: The Minnesota Story, free rental from Farmers and Mechanics Bank, Minneapolis.

Film: Minneapolis Story.

Film: Saint Paul ...Fur Trade to Space Age, 28 min., free rental from First National

S. Gains information by studying pictures.

G. Phenomena are distributed unevenly over the earth's surface, resulting in diversity or variability from one place to another.

G. Specialization of individuals and regions makes for interdependence.

d. Minneapolis and St. Paul differ somewhat despite the fact that they border upon each other. However, both are important industrial and trade centers.

G. The Twin Cities are dependent upon other areas for raw materials and for markets. They provide the trade center for the Upper Midwest region.

1. Producers depend upon raw materials from the Upper Midwest and other parts of the country. The people in the urban area also depend upon farmers for food.

68. Examine once more the pictures of downtown Saint Pau
apolis which appear in Borchert's Minnesota's Changi
If the youngsters are familiar with the area shown i
tures, let them identify some of the major buildings
locate the flour mills, St. Anthony Falls, Nicollet
road yards, etc. Have them locate the railroad yard
Paul picture. Where are the railroad tracks in rela
river in both cities? Is there a difference between
Paul and Minneapolis are laid out? (Several differe
1. In St. Paul the largest buildings are near the r
located in sites that were historically predominate.
apolis the larger buildings are located in the "newe
of town. 2. Minneapolis is laid out roughly accord
checkerboard pattern whereas many streets converge o
town area of St. Paul at odd angles. 3. Notice that
lead off from downtown St. Paul in two directions.
west bridge connects the downtown area with Dayton's
is another opportunity to emphasize that St. Paul is
hills.) Now ask: In the light of all that you have
studied, how would you describe the other difference
St. Paul and Minneapolis? How would you explain the
ences? In what ways are the two cities alike?

69. Say: We have talked about how resources close to th
have affected the Twin Cities. Now let's turn brief
growth of the Twin Cities may have affected farmers
areas. How do you think the corn-area farmers have
Now show pupils maps of the dairy region and of the
raising region. Ask: Where are they in relationshi
Cities area? Suppose no large urban area had grown
area. Do you think the farmers would still be growi
and keeping dairy cows? Why or why not?

Bank, Public Relations Dept.,
St. Paul, 55101.

owntown Saint Paul and Minne-
innesota's Changing Geography.
the area shown in these pic-
e major buildings. Have them
Falls, Nicollet island, rail-
the railroad yards in the St.
ad tracks in relation to the
ifference between the way St.
(Several differences are:
gs are near the river and are
ally predominate. In Minne-
ated in the "newer" sections
ut roughly according to a
treets converge on the down-
3. Notice that the bridges
two directions. The east-
rea with Dayton's Bluff. This
that St. Paul is a city of
all that you have seen or
other differences between
d you explain these differ-
ties alike?

Borchert, Minnesota's Changing Geography, 117, 118.

urces close to the Twin Cities
let's turn briefly to how the
affected farmers in nearby
rea farmers have been affected?
egion and of the vegetable
ey in relationship to the Twin
n area had grown up in this
ld still be growing vegetables
not?

Borchert, Minnesota's Changing Geography, pp. 39, 44.

G. Industry is dependent upon iron and steel for machines even when the factory does not use steel as a resource in making its products.

G. Specialization of individuals and regions makes for interdependence.

G. People in most societies of the world depend upon other people who live in other communities and regions for goods and services and for markets for goods.

2. Producers sell their products to the region, other regions of the country, and even to other parts of the world.

70. Ask: To what extent are the industries in the Tw
ent upon iron and steel? Are any of the non-meta
tries dependent upon them for anything? Why? Wh
Twin Cities area get its steel (from northern Min
the east)? Why?

71. Ask: What have we learned already about the kind
ials and other products which people in the Twin
and bring in from other places? (Make a list on
pupils suggest kinds of items.) What have we lea
business firms sell products outside of the Twin
What products are sold elsewhere? (Make a list o
necessary review the chart of commodities shipped
sippi now that the nine-foot channel has been comp
activity 44. Also review what pupils learned abo
pipelines to bring in crude oil and natural gas a
they learned about sources of raw materials for s
ies in the area or kinds of products produced by
ies which might be shipped elsehwere. If pupils
Twin Cities area and have studied the Center's fo
course, they should be able to identify many prod
and exported by local industries. If pupils have
the fourth grade unit as it deals with the Twin C
give them the outline of the following chart whic
complete by reading Borchert and using the Minnes
of Manufacturers or by writing to the companies f
Afterwards discuss the information in the chart.
have pupils examine the page in the Directory whi
the type of market of each firm.)

ustries in the Twin Cities depend-
y of the non-metal working indus-
ything? Why? Where might the
from northern Minnesota or from

dy about the kinds of raw mater-
ople in the Twin Cities must buy
(Make a list on the board, as
What have we learned about where
side of the Twin Cities area?
? (Make a list on board.) If
mmodities shipped on the Missis-
nnel has been completed -- see
upils learned about the use of
and natural gas and anything
materials for some of factor-
ucts produced by these factor-
vere. If pupils live in the
the Center's fourth grade
dentify many products imported
. If pupils have not studied
with the Twin Cities area,
lowing chart which they should
using the Minnesota Directory
the companies for information.
on in the chart. (Be sure to
he Directory which explains
)

Borchert, Min
sota's Changin
Geography, pp.
13-136.
Minnesota Direc-
tory of Manufac-
turers.

3. The trade areas of different industries differ; some of the companies have national trade areas, some only state-wide trading areas, some regional trading areas, and some just local markets.

INDUSTRY	PROBABLE SOURCE OF RAW MATERIALS	WHERE IT SELLS MOST PRODUCTS	REASON WHY BUSINESS IS LOCATED WHERE IT IS
S. St. Paul Stockyards			
Oil Refinery			
Factory Making Refrigerators			
Brewery			
Minnesota Mining and Manufacturing			
Grain and Feed Mills			
Minneapolis Honeywell			

72. The concept of the trade areas of various businesses should be introduced. The Minnesota Directory of Manufacturers should be invaluable for the teaching of this concept. (See page listing key to symbols for market and number of employees for Part I.)

G. Today factories tend to locate close to the source of needed raw materials if these materials are perishable or heavier or bulkier than their finished product; factories tend to locate closer to their markets than to the source of needed materials if their products are heavier and bulkier than the raw materials, and if their products are perishable.

G. Factories which are not close to either the source of their raw materials or to their markets may develop for a number of reasons such as: (1) new ideas of people in the area,

4. Whether or not a factory will be put up closer to sources of raw materials or to markets or close to either depends upon a number of factors; some of the Twin Cities import raw materials from some distance and have national markets as well.

The teacher should select five or six Twin City firms having a national market, (or even a world market), five or six having a state-wide market, five or six having a regional market, and five or six having just a local market. Prepare a chart to present this data. Perhaps the following form would be helpful:

NAME OF BUSINESS	MAIN PRODUCT OR PRODUCTS	NUMBER OF EMPLOYEES	EXTENT OF MARKET

After the material is presented, the pupils should be encouraged to hypothesize about the reasons why some businesses have national markets whereas others serve smaller areas.

Now return to the lists of raw materials and probable sources of such materials. Ask: Since some of these materials (point out) do not come from the local area, why would the factories using them be built in the Twin Cities area?

Borchert, Minnesota's Changing Geography, pp. 87-90.

Have pupils look at the national markets for some of the industries. Point out that many of the goods are sold in eastern states. Ask: Since some of the factories sell goods in other parts of the country and particularly in the big cities of the east, why do you think the factories were not built closer to those cities?

Now point out some industries which import raw materials from some distance and also sell much of their goods in distant markets as well as in the local area. Ask: Why do you think such industries might develop in the Twin Cities area or in any part of Minnesota? Let several pupils read Borchert's description of the growth of some factories in Minnesota towns because of

(2) the number of skilled workers in the area who developed their skills by working in other but related types of jobs, (3) the need of earlier companies to switch to new products in order to remain in business.

S. Sets up hypotheses and figures out ways of testing them.

S. Tests hypotheses against data.

5. Stores and other non-manufacturing firms in the Twin Cities also differ in the size of their markets.

G. Cities are likely to grow if they perform functions which are needed by the surrounding community or for a larger functional region.

6. The Twin Cities -- Upper Midwest region might be thought of as being delimited by trade; it is a functional region, even though some of the other characteristics vary. A functional region may be identified by the trade of a metropolitan area.

past factories in the area, because of peoples' skills and because of people's ideas. They should report Borchert's conclusions. Discuss: Would any of these factors seem to be important for some of the industries developed in the Twin Cities area? If so, which ones? What advantages would these factories have over those in smaller towns in Minnesota?

74. Have the class set up hypotheses about the possible size of trading regions for the following types of stores and businesses in the Twin Cities: (a) shopping center retail store, (b) large department store in center of city, (c) wholesale store, (d) small grocery store in or close to residential section, (e) banks, and (f) insurance companies. Ask: How can we check on our guesses? Let several pupils follow up on the suggestions through visits to stores or through letters requesting information.

75. If pupils live in the Twin Cities, you might ask the owner or an employee of a local concern to talk to the class about his company and explain its trade area. A parent of one of your pupils would be a fine prospect.

76. If pupils have collected data from individual firms, have them map the sales of products and services from these firms beyond the Twin Cities area. What do pupils notice about the area served by the firms? If pupils have not collected data from individual manufacturing firms, have them count the number of Minneapolis and St. Paul firms which are listed in the Minnesota Directory of Manufacturers as having only a local market, a regional market, and a national or world market. Now ask: What does this data tell

S. Applies previously-learned concepts and generalizations to new data.

G. Regions are delimited on many different bases, depending upon the purpose of the study. Some are delimited on the basis of a single phenomenon, some on the basis of multiple phenomena, and some on the basis of functional relationships.

you about the Twin Cities? Have several pupils check Borchert to find out what this geographer says about the importance of the Twin Cities in the region.

77. Now say: Many geographers place all of Minnesota, the eastern part of the Dakotas, and much of Wisconsin into a region called the Upper Midwest. Have pupils examine maps of the region especially maps of Minnesota. Ask: Would you group all of these places in one region on the basis of climate? natural vegetation? soil? landforms? agricultural production? ways of making a living? Why do you think geographers frequently group these places together in a region? What does tie them together? (Help pupils understand the fact that this is a trade or functional region.)

78. Now have pupils look once again at how they regionalized the country in activity 96 of the overview and how they learned that some geographers regionalize the country. What places does Borchert include in the Midwest? Have pupils look at some other textbooks and find out what places other geographers group in the Midwest. Why do they differ somewhat?

Then say: Shortly we are going to turn to this area included by Borchert in the Midwest region and see if we think the Twin Cities and the Upper Midwest should be grouped with the other places Borchert includes within it. We will also try to find out why Borchert regionalizes the area in this fashion and why some other geographers draw boundaries somewhat differently.

If the teacher has decided to teach the Red River Valley case study, add to the above comment: Before we turn to the Midwest

G. A number of factors -- climate, surface features, natural resources, accessability, and history -- affect settlement patterns.

A. IS SCEPTICAL OF THEORIES OF SINGLE CAUSATION IN THE SOCIAL SCIENCES.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

S. Tests hypotheses against data.

S. Generalizes from data.

as a whole, however, we are going to examine in a little more detail the Red River Valley which has played such an important part in the development of the Twin Cities.

79. Now say: Before we turn to anything else, however, let's see what conclusions we can draw -- at least tentatively -- from our study of the Twin Cities.

Conduct a summary discussion on the case study as a whole by asking: Why did the Indian, the early white men, and present-day Twin Cities dwellers use this same area so differently? What has led to the growth of this large urban area? Why have some industries declined while other have grown? What kinds of change might we expect in the future? Perhaps divide the class into groups and give each group a list of questions to discuss. Tape the discussions for evaluation purposes.

80. Have pupils prepare a mural which shows the different eras in the Twin Cities area. It might also depict what pupils think the area may be like in the future.

81. Now have pupils look once again at the hypotheses they set up early in the case study (activity 7-8) about the Twin City area. Ask: Should we remove any of these hypotheses because we have found data which contradicts them? Should we modify any of these hypotheses? Are you willing to accept the rest of these as tentative generalizations? Why or why not? Do you think we should add any other generalizations to this list? If so, why?

MATERIALS

I. Books For Pupils

Anderson, Edna A. *Communities and Their Needs*. Morristown, N.J.: Silver Burdett, 1967.

Blegen, Theodore C. *Building Minnesota* Boston: D.C. Heath, 1938.

Borchert, John. *Minnesota's Changing* Geography. Minneapolis: University of Minnesota Press, 1959.

Ford, Antionette E. *Minnesota Past and Present.* Chicago: Lyons and Carnahan, 1950.

Hillbrand, Percie V. and James W. Clark, *Our Minnesota*. Syracuse: L.W. Singer Co., 1964.

Poatgieter, A. Hermina and James Taylo Dunn, eds., *Gopher Reader*. St. Pau Minnesota Historical Society, 1958.

II. Articles For Pupils

Gopher Historian

Spring, 1960 (Issue on St. Paul)
Spring, 1961 (Issue on Minneapolis)

ommunities and
rristown, N.J.:
1967.

Building Minnesota.
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nesota's Changing
apolis: University
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Minnesota Past
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1964.

ina and James Taylor
er Reader. St. Paul:
ical Society, 1958.

e on St. Paul)
e on Minneapolis)

Winter, 1960-1961 (Issue on Northeastern Minnesota with article on forest industries.)
Fall, 1966 (article on "Restoration of Fort Snelling")
Spring, 1966 (article on "Collection of Historical Letters")

III. Reference Materials to be Used by Pupils

Minnesota Directory of Manufacturers 1959-1960. St. Paul: Minnesota Department of Business Development, 1960. Distributed by Documents Division, Department of Administration, 115 State Capitol, St. Paul 1, Minn. (Cost of $5.00; payment must accompany order, Checks payable to Documents Section.)

St. Paul and Minneapolis Telephone Directories, Yellow Pages sections. Northwestern Bell Telephone Co., Minneapolis.

World atlas.

[illegible]er's "Student Almanac".

IV. Books to be Used by Teacher in Unit Activities (As sources of pictures, diagrams, maps, and selections to be read aloud.)

Bergman, Robert. Minnesota in Pictures. Minneapolis: Kenwood Publishing Co., 1967. (A book of photographs of the Twin Cities and many other parts of Minnesota.)

Brink, Carol. The Twin Cities. New York: Macmillan, 1961.

Fowell, History of Minnesota. Vol 1. St. Paul: Minnesota Historical Society, 1930. (Republished in 1956.)

Heilbron, Bertha L. The Thirty-Second State, A Pictorial History of Minnesota. St. Paul: The Minnesota Historical Society, 1958.

Kane, Lucile M. The Waterfall That Built a City. St. Paul: Minnesota Historical Society, 1966. (Pictures plus data for teachers.)

Minneapolis, A Story of Progress in Pictures. Minneapolis: T.S. Denison & Co., 1954.

Holmquist, June Drenning and Jean A. Brookins, Minnesota's Major Historical Sites. St. Paul: Minnesota Historical Society, 1963.

Richter, Conrad. Light in the Forest. New York: Bantam paperback ed., 1963.

Schwartz, George M. and George A. Thiel. Minnesota's Rocks and Waters. Minneapolis: University of Minnesota Press, 1954.

Steinhauser, Frederic R. Geography in the General College, A Study Guide. 1966-1967, Minneapolis: University of Minnesota, Nicholson Hall Bookstore.

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ublishing Co.,
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1956.)

Thirty-Second
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Progress in Pic-
S. Denison & Co.,

and Jean A. Brook-
r Historical Sites.
storical Society,

n the Forest. New
ed., 1963.

George A. Thiel.
Waters. Minneapo-
nesota Press, 1954.

Geography in the
dy Guide. 1966-
versity of Minne
ookstore.

Szarkowski, John. The Face of Minnesota. Minneapolis: University of Minnesota Press, 1958. (Largely photographs)

V. Films.

History in Your Community. Coronet, 15 min.

Indians of Early America, EBF, 2 reels.

Water Power. EBF, 1 reel.

VI. Filmstrips.

Geological History of Minnesota. University of Minnesota.

How We Learn About the Past. Filmstrip of the Month Club, 355 Lexington Ave., New York 17.

Transportation From Horse to Jet. Life Filmstrip.

VII. Tape.

Steaming Up the River. Tapes for Teaching Library, Minnesota Dept. of Education, St. Paul.

VIII. Models and Maps (other than in books).

Oil company maps of Twin Cities.
Wall maps
    Physical-political map of U.S.
    Map of World
Relief Model of Twin Cities Area or Topographic Sheets of Twin Cities Area.

Smaller Maps

Map of Population of U.S. in Classroom Pictures Set on The Northeast, plate 16.

1669
c.1

rade Five
nit: The Middle West
Sub-unit B: The Red River Valley

RESOURCE UNIT

These materials were developed by the Project Social Studies Curriculum Center of the University of Minnesota under a special contract with the Cooperative Research Division of the United States Office of Education, effective prior to July 14, 1965. (Project HS-045).

1967

OBJECTIVES

This unit should make progress toward developing the following objectiv

CONCEPTS

1. Globalism: seasons.
2. Location
   a. Position: longitude, latitude.
   b. Situation: distance, direction, relationships.
   c. Site: landforms (plains, marshes, valley), water (river, drainage), climate (temperature, growing season, precipitation), soil (types, exhaustion), vegetation (prairie).

3. Cultural us
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fishing, in
4. Diversity-v
5. Change: ph
6. Interrelate
7. Culture: p
8. Economic co
demand.

OBJECTIVES

s toward developing the following objectives:

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irection, relationships.

s, marshes, valley),
), climate (temperature,
tation), soil (types,
(prairie).

3. Cultural use of environment: population density, agricultural types (single-crop farming, diversified farming, cash crop farming), hunting and fishing, industrial development, transportation.
4. Diversity-variability: patterns, region.
5. Change: physical, biotic, man-made.
6. Interrelatedness: areal association, trade.
7. Culture: persistence, change, diffusion.
8. Economic concepts: barter, price, supply and demand.

GENERALIZATIONS

1. Every place has three types of location: a position, a site, and a situation.
   a. Location is a position which sets a pheno enon at a specific point on the earth's surface, usually designated by an abstrac grid and described in terms of latitude a longitude.
   b. Situation describes a phenomenon in areal relationship with other phenomena with wh it is associated.
   c. Site relates a phenomenon to the detailed physical setting of the area it occupies.
2. Nature changes the character of the earth through physical and biotic processes.
3. Soil in a particular place is affected by th type of basic rock in the region; the climat vegetation; erosion; wind, glaciers, and riv which move soil; and by how man treats the s
4. Vegetation is affected by temperature, rainf and soil.
   a. Differing crops need differing amounts of rainfall and differing temperatures and nu of frost-free days in order to grow.
5. Towns need means of shipping goods in and out they are likely to grow up where transportati is good, particularly where different types o transportation meet.

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ere transportation
different types of

6. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.
   a. Climate sets up limitations upon man's activities given a specific level of technology, but man has learned to overcome many of the earlier limitations.
   b. Types of agriculture in a region depend upon man's cultural values, perceptions, and level of technology as well as upon climate, soils, and topography.
   c. A number of factors--climate, surface relief, natural resources, accesibility, and history--affect settlement and growth patterns.
   d. Machinery and power make possible greater production (including the speed and quantity of things transported).
      1) Output can be increased by technological progress in the development of tools and machines and power to replace manpower.
   e. The significance of location depends upon cultural developments both within and outside an area.
      1) A change in situation brings about a change in the use of the site.
   f. Man changes the face of the earth.
7. Population is distributed unevenly over the earth's surface.

8. Innovations occur in all societies; they occur in ideas and behavior, not just in things.
   a. Although culture is always changing, certain parts or elements may persist over long periods of time.
   b. Innovations may come about as a result of diffusion or borrowing from other people.

9. Specialization makes for interdependence.
   a. People who live in one community or region depend upon each other for different goods and services and for markets for goods and services.
      1) Barter consists of the exchange of goods and services for other goods and services without the use of money.
   b. People in most societies of the world depend upon people who live in other communities or countries for certain goods and services and for markets for their goods.

10. Other things being equal, the price of a good rises when the good is in short supply as compared to the demand for the good and falls when the supply of the good is larger than the demand at the existing price.

11. Demand affects the supply of goods and services by affecting prices. Other things being equal, the higher the price for a good, the larger the quantity which will become available for sale.
   a. In general people in this country wish to sel their labor, land, capital or goods for the highest incomes possible in order to obtain the largest amount of desired goods and services.

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goods and ser-

SKILLS

The broad skill toward which teaching is directed is underlined. A specific aspect of a skill or an understanding needed to learn a skill is in plain type.

1. Attacks problems in a rational manner.
   a. Sets up hypotheses.
2. Gathers information.
   a. Gains information by listening.
   b. Gains information by observing simple experiments.
   c. Gains information by studying pictures.
      1) Interprets pictures.
   d. Makes graphs to present information.
   e. Draws inferences from tables and graphs.
3. Evaluates sources of information.
   a. Checks on the bias and competency of authors.
4. Uses effective geographic skills.
   a. Identifies directions on map.
   b. Uses map grid to locate places.
   c. Differentiates between small scale and large scale maps and knows when to use each.
   d. Interprets map symbols in terms of map legend.
   e. Interprets map symbols (contour lines).
   f. Draws inferences from comparisons of different map patterns of the same area.

5. Has a sense of time.
   a. Interprets timelines.
   b. Looks for relationships among events which occur in different places.
6. Organizes and analyzes data and draws conclusions.
   a. Applies previously-learned concepts and generalizations to new data.
   b. Tests hypotheses against data.
   c. Generalizes from data.

ATTITUDES

Is curious about social data.

AN ABBREVI

I. The Red River Valley is located in the Upp
northeastern part of North Dakota.

A. The Red River Valley is located in the
Canada.

B. The Red River Valley's location made i

C. The Red River Valley has short growing

D. The topography of the valley was affec

E. The Red River Valley is a land of prai

F. The flat plain of northwestern Minneso
the Red River Valley, sandy ridges to
east of the sand ridges.

G. Deep, rich soil was produced because o

II. We look at how the Sioux Indians lived in
Valley.

A. Originally a Woods Indian, the Sioux w

B. The Sioux were forced to change their
which differed greatly from the forest

C. The Sioux did not change all of their
plains.

III. We look at how the early white men used the

A. White men came into the region because

AN ABBREVIATED OUTLINE OF CONTENTS

is located in the Upper Midwest in the northwestern part of Minnesota and the North Dakota.

ey is located in the middle of the continent and extends into both the U.S. and

ey's location made it possible to approach overland from three different waterways.

ey has short growing seasons and sparse rainfall.

the valley was affected greatly by glaciers.

ey is a land of prairies.

northwestern Minnesota is made up of three areas: the gently sloping plain of ey, sandy ridges to the east of the valley, and an area of marshes and swamps idges.

s produced because of the interaction of the growing season and the precipitation.

ux Indians lived in the area before the coming of the white men to the Red River

Indian, the Sioux were pushed from the forests by the Chippewa.

ced to change their way of life and learn to use the resourses of the plains atly from the forest lands in which they had been living.

change all of their ways of living; they took many of them with them to the

ly white men used the Red River Valley during the fur-trading era (1790-1850).

the region because of the fur trade.

B. Fur traders used both water and la

1. Early fur traders used the wat
   the market for their furs was
   furs in Red River carts.

2. Red River carts were used to t
   smaller river steamboats on th

IV. We look at how the white man lived in
bonanza period (1880-1900).

A. The coming of the railroad in the
   and in farming.

1. The railroads wished to make t

2. The population of the Red Rive
   to the region; then it increas

B. After the richness of the soil was
   their way of life to the resources

1. The lack of trees created prob
   had to do as compared to that

2. Farmers took their old culture

3. A number of settlers developed

4. Some farmers remained small la
   for Minnesota at that time.

5. The farmers gradually cooperat
   the land.

C. After some years of greatly incre
   became unprofitable.

h water and land routes.

s used the water routes, but later fur traders found that the best way to reach
heir furs was by several overland routes to St. Paul. They transported the
r carts.

were used to transport furs and goods until the coming of the railroads and
eamboats on the Minnesota and Red Rivers made them obsolete.

man lived in the valley after the coming of the railroads in the wheat
0).

ilroad in the Red River Valley brought about an increase in the population

shed to make their lines profitable.

f the Red River Valley increased very slowly until the coming of the railroads
hen it increased rapidly.

f the soil was discovered, the settlers began to farm the region, adapting
the resources which they found on the prairies.

s created problems for the farmer, although it reduced the amount of work he
pared to that facing those settling in forested areas.

ir old culture with them, adapting only in certain ways to the new environment.

lers developed bonanza wheat farms.

ained small land-owners, although most obtained larger farms than the average
that time.

ually cooperated on digging drainage ditches in order to make use of more of

greatly increased wheat production and high prices, bonanza wheat farming

V. We look at how men live in the Red Ri

A. Farmers have learned to rotate th

B. The farmers searched for other cr
has been replaced by diversified

C. Farmers now use huge machines to
farms must be large.

D. Modern man has used his knowledge
of climate.

E. The climate and topography of the
The farmers grow what is the most
need to diversify and rotate crop

F. The population of the Red River V
family farms; population is heavi

G. In the towns and cities of the re
needs of the farmers who live aro

VI. Man has used the Red River Valley ver
greatly by what happens to markets fo

the Red River Valley today.

rotate their crops to prevent soil exhaustion.

r other crops that they could produce in their areas. Single crop farming versified farming.

chines to farm in the Red River Valley; to make such machines profitable,

knowledge to develop hardier strains of seed to overcome the limitations

phy of the land make the Red River Valley a good cash crop farming region. s the most profitable crop at a given time, although they also consider the otate crops.

ed River Valley is sparse in most of the region because of the many large n is heavier in a few large towns and cities.

of the region, the ways in which people make a living are related to the live around the towns.

Valley very differently in different periods. Today the region is affected markets for products in the country as a whole and in the world.

OBJECTIVES

G Every place has three types of location: a position, a site, and a situation.

G Location is a position which sets a phenomenon at a specific point on the earth's surface, usually designated by an abstract grid and described in terms of latitude and longitude.

S. Identifies directions on map.

S. Uses map grid to locate places.

G Situation describes a phenomenon in areal relationship with other phenomena with which it is associated.

S Sets up hypotheses.

S. Applies previously-learned generalizations to new data.

S Tests hypotheses against data.

G Temperature is affected by the distance from the equator, elevation, distance from warm water bodies, prevailing winds, and physical features which block winds from certain directions.

G Rainfall is affected by distance from bodies of water, wind direction, temperature, and physical features which block winds carrying moisture.

S Differentiates between small scale and large scale maps and knows when to use each.

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B. Th
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C. Th
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OUTLINE OF CONTENT

I. The Red River Valley is located in Upper Midwest in the northwestern part of Minnesota and the northeastern part of North Dakota.

   A. The Red River Valley is located in the middle of the continent and extends into both the U.S. and Canada.

   B. The Red River Valley's location made it possible to approach overland from three different waterways.

   C. The Red River Valley has short growing seasons and sparse rainfall.

TEACHING PROCEDURES

1. Begin by using a map of North America. Locate Minnesota and I
   Ask: What is the general location of these states on the con
   what region are they?

   Ask: If you were going to tell someone else just where the R
   is, how would you do so in the most specific way possible? (I
   identify area by latitudinal and longitudinal range.)

2. Have pupils find the Red River, Hudson's Bay, the Minnesota R
   Mississippi River, the Twin Cities, the Great Lakes, and Lake
   Ask: Why do you think the location of the Red River in relat
   these other places might have been important?

3. Ask: What kind of climate would you expect to find in the Re
   Why? Review with pupils factors affecting temperature. Whic
   important in determining temperature in Red River Valley? Re
   pupils factors affecting precipitation. Which of these is im
   affecting the rainfall pattern in Red River Valley.

   Now have pupils check their guesses against temperature and r
   and climatic tables.

   Have pupils compare the moisture map in Borchert and McGuigan
   in Borchert which shows the drier part of Minnesota. Why doe
   map show differences in an area shown all in one color on the

. Locate Minnesota and North Dakota. these states on the continent? In

e else just where the Red River Valley ecific way possible? (Have pupils tudinal range.)

's Bay, the Minnesota River, the e Great Lakes, and Lake Traverse. the Red River in relationship to ortant?

xpect to find in the Red River Valley? ting temperature. Which of these is in Red River Valley? Review with . Which of these is important in River Valley.

ainst temperature and rainfall maps

in Borchert and McGuigan with the map of Minnesota. Why does the second all in one color on the first map?

MATERIALS OF INSTRUCTION

Physical-political map of North America.

For map of Jan. and July temperatures, see Deasy, et. al,, The World's Nations, p. 30 or Nystrom transparency on Average Temperature. Or use a map of growing seasons such as that in Borchert and McGuigan, Geography of the New World, p. 24 or the Informative Classroom Picture Set on The South, plate 13. Or use maps of summer weather and freezing weather in Borchert, Minnesota's Changing Geography, p. 12.

S. Sets up hypotheses.

S. Interprets pictures.

G. Site relates a phenomenon to the detailed physical setting of the area it occupies.

G. Nature changes the character of the earth through physical processes.

S. Interprets map symbols (contour lines).

S. Gains information from listening.

S. Gains information by observing simple experiments.

D. The topograph
the glaciers

1. About a mi
glaciers b

2. As the gla
was formed

3. A few lake
lake bed a
this regi

4. Fine sand
the lake f
ago, leavi

D. The topography of the valley was affected greatly by the glaciers.

1. About a million years ago the Ice Age began and glaciers began to creep over the land.
2. As the glacier melted and retreated, a huge lake was formed which man later named Lake Agassiz.
3. A few lakes and the Red River flowing through the lake bed are reminders of the lake that once covered this region.
4. Fine sand and silt settled to the lake bottom, and the lake finally drained away several thousand years ago, leaving a great flat plain.

4. Use the aerial view of the Red River Valley in Borchert. It sh
flatness of the land in the valley. Ask: Why is the Red River
so flat? Pupils should read the following to try to find out:

   a. Borchert, pp. 10-11 on "The Ice Age and Glaciers"

   b. Borchert, pp. 22-23 on "The Region of the Flat Plain."

   Play and discuss one of the following tapes: "Prehistoric Minn
   "Great Inland Sea," or "Before the Pioneers."

   Now have pupils examine the maps showing the extent of the glac
   the extent of Lake Agassiz. Compare with present-day map to not
   to Red River Valley.

   Show a contour map of the area. Have pupils figure out how muc
   land slopes in the course of one mile. Ask: How would this ge
   affect river currents? How would it affect water drainage in p
   where there are slight depressions or hollows in the land? Wha
   river banks would you expect to find along the Red River?

5. Demonstrate with a pan, water, and sand or dirt how the sand an
settled to the bottom of Lake Agassiz. Drain off the water car
slowly, leaving a deposit of dirt on the bottom. This shows ho
was left after Lake Agassiz drained to the north.

For maps of moisture, see Borchert and McGuigan, Geography of the New World, p. 21. For precipitation map see Informative Classroom Picture Set on The South, plate 13. For map of drier part of Minnesota see Borchert, Minnesota's Changing Geography, p. 12. For climatic table see Project's "Student Almanac."

River Valley in Borchert. It shows the
lley. Ask: Why is the Red River Valley
he following to try to find out:

Borchert, Minnesota's Changing Geography, p. 51 (aerial photo), pp. 10-11, 22-23.

Ice Age and Glaciers"

Region of the Flat Plain."

llowing tapes: "Prehistoric Minnesota,"
the Pioneers."

University of Minn. tape library. Tape YMH-645-1 PREHISTORIC MINNESOTA, BIRTH OF A GIANT. Tape YMH-645-2 GREAT INLAND SEA, LAKE AGASSIZ AND THE RED RIVER VALLEY. Tape FCT-634-62 BEFORE THE PIONEERS (On the history and geology of the state).

ps showing the extent of the glaciers and
mpare with present-day map to note relation

. Have pupils figure out how much the
ne mile. Ask: How would this gentle slope
uld it affect water drainage in places
ions or hollows in the land? What kinds of
o find along the Red River?

and sand or dirt how the sand and silt
Agassiz. Drain off the water carefully and
irt on the bottom. This shows how the soil
ined to the north.

Pan, water, sand.

G. Vegetation is affected by temperature, rainfall, and soil.

G. Nature changes the character of the earth through biotic and physical processes.

S. Sets up hypotheses.

S. Applies previously-learned concepts and generalizations to new data.

G. Soil in a particular place is affected by the type of basic rock in the region; the climate; vegetation; erosion; wind, glaciers and rivers which move soil; and by how man treats the soil.

G. Nature changes the character of the earth through biotic processes.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology. II

G. Innovations occur in all societies; they occur in ideas and behavior, not just in things.

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E. The Red River Valley is a land of prairies.

F. The flat plain of northwestern Minnesota is made up of three areas: the gently sloping plain of the Red River Valley, sandy ridges to the east of the valley, and an area of marshes and swamps east of the sandy ridges.

G. Deep, rich soil was produced because of the interaction of the growing season and the precipitation.

1. High, thick grasses grew on the prairie.
2. Over the years, through a process of growth and decay, rich soil was built on the flat land of this region. The soil is of heavy and sticky clay known as gumbo.
3. The gumbo soil does not let water drain through it easily, and since the land slope is so gentle, part of the Red River Valley does not drain well.
4. The sandy ridges to the east of the Red River Valley consist of glacial deposits.

II. We look at how the Sioux Indians lived in the area before the coming of the white men to the Red River Valley.

A. Originally Woods Indians, the Sioux were pushed from the forests by the Chippewa.

6. Ask: Given what you know about the climate of the Red Ri
kind of natural vegetation would you expect to find here?
guesses against a map of natural vegetation. (Or, if pup
the vegetation is like from their earlier study of the Tw
ask them to explain why the area is a prairie area.)

7. Call the attention of pupils to the words "Big Bog" on th
Why do they think this air might not drain well? Now sh
of surface relief which shows this bog. How does this ma
plain the "Big Bog?" Then have several pupils read Borch
of the area and find out another reason for the bog besid
much surface relief.

Then ask: How might this Big Bog affect the routes by wh
settlers came into the Red River Valley? Why?

8. Now ask: What would you expect the soil of the Red River
Why? (Let pupils make hypotheses on the basis of what the
earlier about factors affecting soil.) Remind them of the
they have just seen to the east of the Red River Valley.
account for the sandy area here?

Now have pupils read Borchert's description of the prairie
soil in the Red River Valley. Also read aloud his one par
tion on p. 51 of the effects of gumbo soil on drainage.
might this raise for early farmers? Would it create the s
Indians? Why or why not? (Not as important for hunting p
people who depend more heavily upon agriculture.)

9. Examine a map of the United States which shows the areas i
various Indian tribes lived before the white man arrived.

Ask: Where did the Sioux live then? What do you remember
the Sioux lived when white explorers came to Minnesota?
recall this information from the Twin Cities unit.) Revie
Sioux life in the woodlands area and the life of the Sioux

te of the Red River Valley, what ct to find here? Why? Check on. (Or, if pupils remember what study of the Twin Cities unit, irie area.)	Borchert, Geography of Changing Minnesota, p. 24 (Map of vegetation).
"Big Bog" on the vegetation map. in well? Now show pupils the map How does this map help them ex- upils read Borchert's description or the bog besides the lack of	Borchert, Minnesota's Changing Geography, p. 15 (Map of surface relief showing bog), p. 23 (description of 3 areas of northern plain), p. 24. (Vegetation map).
the routes by which early white Why?	
the Red River Valley to be like? basis of what they have learned emind them of the sandy ridges d River Valley. What might	Borchert, Minnesota's Changing Geography, p. 23, 27-28. Also see p. 51 for paragraph to be read aloud to class.
on of the prairie and of the aloud his one paragraph descrip- on drainage. What problems it create the same problems for int for hunting people as for lture.)	
hows the areas in which the te man arrived.	Tunis, Indians, p. 72 shows map of northeastern U.S. tribal locations. Browster, First Book of the Indians, p. 14 (map of U.S. showing area simply divided into tribal locations).
do you remember about where to Minnesota? (Pupils should es unit.) Review the early ife of the Sioux on the prairie	

G. Although culture is always changing, certain parts or elements may persist over long periods of time.

S. Gains information by studying pictures.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. Innovations may come about as a result of diffusion or borrowing from other people.

G. Culture is always changing.

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2. Th
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1. The Sioux originally lived in the forests of eastern Minnesota. They used the resources of the forest by hunting deer, fishing, and gathering berries and roots.

2. The Sioux were pushed from the forests by the Chippewa, as Indians of the east were pushed westward by the white man.

or the edge of the prairie. Then do as many of the following activities as necessary to clarify pupils' ideas about what the change in physical environment meant to the Sioux and how the Sioux lived in the Red River Valley. (The number you use will depend in part upon the amount of time spent on the Indians in the Twin Cities unit. This section of the unit on the Red River Valley should be handled very briefly.)

a. View filmstrips and pictures which depict the mode of life of the Woodland Indians. As these pictures are shown, ask the class to list the ways in which these Indians used their environment in their daily life.

Filmstrips:
1. Aboriginal People of Minnesota, U. of Minn. frames 32, 33, and 37
2. Story of the American Indian. Pageant of Am. Series, frames 4-6, 8.

Suggested still pictures:
1. Indian Life (Clark Wissler, Informative Classroom Pictures.)
2. Indians of Minnesota Minn. Hist. Society.

b. Discuss with the class the effect on the tribal locations of the white man's coming in the eastern part of the United States--the gradual pushing of the tribes to the west. Ask: What do you think happened as the Indians were pushed westward? Why were some of the tribes forced out of their areas? Why was it important that these Indians managed to get rifles from the white man?

c. Show frames 26, 31, and 34 of the filmstrip on Aboriginal People of Minnesota.

Filmstrip, Aboriginal People of Minnesota, U. of Minn., frames 26, 31, 34.

d. Look at the Minnesota maps which show changes in the regions inhabited by the Sioux and the Chippewa.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

S. Gains information by studying pictures.

S. Sets up hypotheses.

G. Although culture is always changing certain parts or elements may persist over long periods of time.

A. IS CURIOUS ABOUT SOCIAL DATA.

A. IS CURIOUS ABOUT SOCIAL DATA.

B. The Sioux were forced to change their way of life and learn to use the resources of the plains which differed greatly from the forest lands in which they had been living.

   1. After being forced to live on the plains, the Sioux learned to depend on the buffalo for food, clothing, and material for shelter and followed the herds as they moved about the plains.

   2. Tepees made of light, easily moved poles and skin replaced the homes of bark, poles, and earth.

C. The Sioux did not change all of their ways of living; they took many of them with them to the plains.

   1. The clothes were of similar design.

   2. Cooking vessels and other tools of living were designed in basically the same way.

   3. They did not change their family patterns or many other social arrangements or their religion.

e. Show pictures of the prairie grasslands and buffalo herds to illustrate the environment to which the Sioux had to adjust. Ask: Could the Sioux live the same way here as they did in the forests? Why or why not? In what ways do you think they would have to change?

Filmstrip: Indian Culture of America--Indians of the Plains, Frame 8 (E.B.F.)
Borchert, Minnesota's Changing Geography, p. 27 (shows grassland picture)

f. Have the class familiarize themselves with the Sioux problem, using some of the books suggested in the bibliography or others which give the needed information. This work might be done as individual research projects or in committees. Pupils should consider the following questions:

1) What changes would have to be made in their ways of living? Why?
2) Do you think it would be easy to completely change your way of life? Why? Do you think that you would change it completely if you moved to a very different area? Why?
3) Would people who lived in the forests willingly leave the woods for the prairie? Why?
4) Would some of the Indians insist on staying in the forests despite the danger? Why?
5) Which members of a tribe might want to remain and which might want to leave? Why?
6) What ways of life do you think the Indians might keep as they moved to the plains? Why?

See bibliography.

g. Have members of the class dramatize the problem facing the Sioux. They should discuss the pros and cons of moving onto the prairies and should illustrate the probable differences of opinion among members of the tribe. The following is possible as a dramatization:

S. Gains information by studying pictures.

S. Tests hypotheses against data.

G. Innovations occur in all societies; they occur in ideas and behavior, not just in things.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. Although culture is always changing, certain parts or elements may persist over long periods of time.

A tribal council is held to decide whether to follow other Sioux who have already left the forest for the prairies. The view of adventur youth might be presented in opposition to the cautious elders.

h. View and discuss some of the filmstrips, films, and pictures which il trate the changes which did occur in the Sioux way of life. Then che list of hypotheses set up in activity e.

10. Assign the writing of a creative story. Pupils should use the following main idea:

> Imagine that an Indian living in our modern-day world is mysteriously transported back to the time of the early Sioux living on the prairie How could he use his knowledge to change their way of life? How coul he help them to be more comfortable--to live a better life? What adv might he give to the Sioux on the use of the land? Would it be accep If accepted, would these changes be permanent if he as mysteriously d parted from the Sioux?

hether to follow other Sioux who
prairies. The view of adventurous
on to the cautious elders.

ips, films, and pictures which illus-
the Sioux way of life. Then check
y e.

Pupils should use the following

modern-day world is mysteriously
arly Sioux living on the prairies.
nge their way of life? How could
to live a better life? What advice
of the land? Would it be accepted?
ermanent if he as mysteriously de-

Filmstrips:

1. Indians of the Plains, Buffalo Hunters on Horseback, Adventures of Early American Indian Series, SVE.
2. Story of the American Indian, Pageant of Am. Series, frames 15, 18, 19.
3. Aboriginal People of Minnesota, U. of Minn. Frames 38-39.

Films:

1. Indian of the Plains--Life in the Past, U. of Minn. rental.
2. Indian Family of Long Ago. E.B.F.
3. Meet the Sioux Indian. MDFP

Still Pictures:

1. Indian Life. Informative Classroom Pictures.
2. Indians of Minnesota. Minn. Hist. Society.

S. Generalizes from data.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

S. Interprets timelines.

S. Looks for relationships among events which occur in different places.

III. W
d

G. Barter consists of the exchange of goods and services for other goods and services, without the use of money.

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III. We look at how the early white men used the Red River Valley during the fur-trading era (1790-1850).

ds

A. White men came into the region because of the fur trade.

ces,

11. Now have the class summarize the way in which the Sioux Indians li the Red River Valley. What was the chief characteristic of how th the resources of the area? Did they have to depend so heavily upon buffalo? Did their physical environment force them into this way Why didn't they become settled farmers instead?

12. Have a committee begin a parallel timeline to show important peric events in the history of the Twin Cities on the top line and impor and events in the Red River Valley on a second line beneath the Tw timeline. Both lines should be drawn to the same scale. As the u gresses, refer to the timeline so that pupils will relate what was in the Red River Valley to what they studied earlier about the Twi

    If pupils have come through the Center's second and third grade co use of timelines will be review. If not, you may wish to use seve ties which resemble those in the Boston unit in the second grade s of helping pupils understand the use of timelines.

13. Ask: What did the Indians have that the white man wanted in Minne Let pupils make guesses to test against data which they will gathe part of the unit.

14. Show pictures of (a) Indians trading with the white man, and (b) r traders soliciting trade from Indians in Indian villages. Discuss the white man want furs? What kinds of furs would he want? Wha of furs would Indians be most likely to find on the prairie?

    Ask: How would the white man obtain these furs from the Indian? would he give the Indians for the furs? (Money? Goods?)

    Ask: What kind of trade can two different groups of people carry they will not accept a common type of money? (If pupils have come the Center's fourth grade course, they should already understand t cept of barter. If not, use examples of informal bartering among such as the exchange of toys, etc.)

the Sioux Indians lived in
acteristic of how they used
pend so heavily upon the
them into this way of life?
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show important periods and
e top line and important eras
line beneath the Twin Cities
ame scale. As the unit pro-
will relate what was happening
arlier about the Twin Cities.

d and third grade courses,
nay wish to use several activi-
n the second grade as a means
nes.

man wanted in Minnesota?
hich they will gather in this

white man, and (b) rival
n villages. Discuss: Why would
would he want? What kinds
n the prairie?

s from the Indian? What
y? Goods?)

ups of people carry on if
(If pupils have come through
already understand the con-
nal bartering among children

Heilbron, The Thirty-Second State, p. 23. Minnesota Historical Society negative #1192 $\frac{(\text{HD2})}{\text{p.15}}$; $\frac{\text{HD2}}{\text{U1}}$; $\frac{\text{HD2}}{\text{U3.1}}$

G. Innovation may come about as a result of diffusion or borrowing from other people.

S. Gains information by studying picture

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

S. Sets up hypotheses.

S. Tests hypotheses against data.

G. The significance of location depends cultural developments both within and outside an area.

G. A change in situation brings about a change in the use of the site.

as a result
from other

ng pictures.

onment in
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s about a
te.

1. Because of the fur trade, military posts, trading posts, and settlements were established.
2. Fur trading led to the development of large fur companies which brought more white men into the region.

B. Fur traders used both water and land routes.

1. Early fur traders used the water routes, but later fur traders found that the best way to reach the market for their furs was by several overland routes to St. Paul. They transported the furs in Red River carts.

Now have the class list some of the articles which the wanted from the white man in exchange for his furs. F cles change the Indian's life?

Refer back to the picture of the Indians trading with see what the goods were that the white fur trader brou at the picture of "beaver money."

15. Use pictures in class to help children understand fur trading into a big business with the formation of employing many fur traders. Also discuss: If you wer knew about Indian-white wars in the east, what would y trading posts? Tell pupils briefly about some of the lished.

16. Ask: What would the white man do with these furs he c Indians? Use pictures of man in buffalo coat or pictu Refer to what they have seen previously in pictures of uses for buffalo. Have the class compare and contrast which the Indian used the furs and for which the white What did the furs mean to the Indian? the trader? the

17. Have pupils examine a map of North America. Ask: How men have come into the region? Now show map of Minnes
    Ask: Could the fur trader have used these same r to market? Refer to the previous discussion on the us the white man and the fact that their destination was the United States or Europe.

Review briefly what pupils learned about the Red River when they studied the Twin Cities unit. Why might som to take furs to St. Paul rather than to the Great Lake

the articles which the Indian probably
hange for his furs. How could such arti-

Indians trading with the white trader to
white fur trader brought with him. Look
"

p children understand the development of
with the formation of large fur companies
o discuss: If you were fur traders who
the east, what would you want besides just
fly about some of the military posts estab-

Pictures:
Trading post store in
Heilbron, The Thirty-Second
State, p. 23; Mendota,
Chief, early trading post,
in Heilbron, p. 61; Fur
trading post in Heilbron,
p. 15; Map of trading posts--
French, English and American
in Blegen, Minnesota, A
History of the State, p. 75.

o with these furs he obtained from the
buffalo coat or picture of beaver hats.
viously in pictures of Indians and their
s compare and contrast the purpose for
nd for which the white man used them. Ask:
dian? the trader? the waiting white customer?

Minnesota Historical Society
Negative # 2606 ($\frac{GI}{U17}$)
Hillbrand and Clark, Our
Minnesota, p. 121.

th America. Ask: How might the early white
Now show map of Minnesota waterways.
have used these same routes to get his furs
s discussion on the uses of the furs by
their destination was the east coast of

ed about the Red River trails and carts
s unit. Why might some fur traders prefer
than to the Great Lakes or the Hudson River?

Map of North America.
Robinson, Economic History
of Agriculture in Minnesota,
p. 29 (map of waterways).
Map of Red River trails to
St. Paul in Blegen, Minnesota,
A History of a State, p. 191 or
Blegen, Building Minnesota,
p. 155, or Hillbrand and
Clark, Our Minnesota, p. 6.
(Physical map showing trails.)

S. Gains information by studying pictures.

G. Machinery and power make possible greater production (including the speed and quantity of things transported).

S. Generalizes from data.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

S. Makes graphs to present information. IV.

S. Draws inferences from tables and graphs.

G. Man changes the face of the earth.

2. Red River carts were used to transport furs and goods until the coming of the railroads and smaller river steamboats in the Minnesota River and the Red River made them obsolete.

IV. We look at how the white man lived in the Valley after the coming of the railroads in the Wheat Bonanza Period (1880-1900).

   A. The coming of the railroad in the Red River Valley brought about an increase in the population and in farming.

Have pupils examine a map of the Red River trail route
If necessary, remind pupils of the steamboats on the M
St. Paul. Ask: Why would the steamboat affect the ro
traders?

If the class did not spend much time on the Red River
studied the Twin Cities unit, you may wish to use the

a. View pictures of Red River carts to see how furs an
ported over land.

b. Have members of the class read the newspaper
about the carts and the cart trains. Ask: Why are
portation better than these carts?

18. Read aloud a description of how a St. Anthony p
a small steamboat to the Red River. Now have the clas
of North America once more. Ask: How might the comin
steamboats affect the fur trade routes?

19. Discuss: How had the coming of the white man changed
How had it changed its relations with other parts of th

20. Supply figures on Red River cart arrivals in St. Paul.
them to make a line graph. Then call attention to the
of carts and the dramatic drop in the number later. As
this number dropped off so rapidly? Refer to the last
the readings. (It describes the carts stopping at Elk R
tering St. Paul after the railroad had been extended to

e Red River trail routes used after 1840.
the steamboats on the Mississippi below
steamboat affect the routes used by fur

time on the Red River fur trade when they
ou may wish to use the following activities:

arts to see how furs and stores were trans-

Deneson, Minnesota Heritage, p. 129; Heilbran, The Thirty-Second State, p. 105. Filmstrip: Pioneers of Minnesota, frames 52-53.

ad the newspaper articles and comments
trains. Ask: Why are modern means of trans-
arts?

See "Selected Readings".

of how a St. Anthony pioneer transported
ver. Now have the class look at the map
: How might the coming of small river
routes?

Blegen, Building Minnesota, p. 154.
Map of North America.

the white man changed the Red River Valley?
with other parts of the U.S. and the world?

arrivals in St. Paul. Have pupils use
call attention to the rapid rise in number
n the number later. Ask: Why do you think
ly? Refer to the last newspaper article in
carts stopping at Elk River rather than en-
ad had been extended to Elk River.)

See "Selected Readings" for data on cart arrivals and for newspaper articles.

S. Draws inferences from comparisons of different map patterns of same area. 1.

S. Gains information by listening.

S. Gains information by studying pictures.

A. IS CURIOUS ABOUT SOCIAL DATA.

S. Checks on bias and competency of authors.

1. The railroads wished to make their lines profitable.

   a. They established very large wheat farms (bonanza farms) to demonstrate the productivity of the soil and thus attract settlers.
   b. The railroads also advertised for settlers and used other means of attracting people to the region.

Project an early railroad map of Minnesota and compare it wit
the Red River cart trails. Discuss the similarity of the two
Would the carts be needed any more? Why or why not? What se
the railroad perform for the valley? What changes do you thi
bring other than the use of Red River carts? (Develop the id
porting goods and people and making it easier for people to l

21. Look at three population maps of Minnesota in 1850, 1860, and
happened to the population of the Valley in these years? Rem
that conditions on the west side of the Red River Valley were
those that we see on the maps of the eastern side of the vall
Once these railroads were built, why would the owners want to
people live there? Where are the people that the railroad ne
they in the Red River Valley in 1870? If you were the owners
road, how might you try to attract people to the Red River Va
would you go to try to get people to come? Now review the me
term "immigrants " and "emigrants."

22. Read aloud some of the descriptions of actual methods that we
attract immigrants to the Red River Valley area. Show pictur
advertising for immigrants, pictures of immigrants arriving i
in Minnesota. Read the description of the part the railroads
campaign. Review reasons for their interest.

23. Have class read Paul Hjelm-Hansen's letter telling about th
Valley. Ask the class to list the reasons given for settling
Examine the letter from the point of view of Hjelm-Hansen. W
letter written? To whom was it written? Did he tell the tru
area? Was all of the information which he told obtained by h
observation or was some of the information gained from other
he omit any information which he should have told prospective
Would this letter have influenced you to move to the Red Rive

esota and compare it with the map of he similarity of the two. Then ask: Why or why not? What services would What changes do you think it would carts? (Develop the idea of trans- t easier for people to live in area.)	Blegen, Minnesota, A History of the State, p. 196.
esota in 1850, 1860, and 1870. What ley in these years? Remind pupils he Red River Valley were similar to eastern side of the valley. Ask: would the owners want to have many ple that the railroad needs? Are If you were the owners of the rail- ople to the Red River Valley? Where come? Now review the meaning of the	Belthuis, Minnesota in Maps. Robinson, Agriculture in Minnesota, pp. 42, 46, 63.
f actual methods that were used to alley area. Show pictures of posters f immigrants arriving in the U.S. and f the part the railroads played in this nterest.	Heilbron, The Thirty-Second State, pp. 157-163. Denison, Minnesota Heritage pp. 130-131. See "Selected Readings".
letter telling about the Red River asons given for settling in the valley. view of Hjelm-Hansen. Why was the en? Did he tell the truth about the ch he told obtained by his direct ation gained from other people? Did ld have told prospective settlers? to move to the Red River Valley?	See "Selected Readings."

S. Draws inferences from a comparison of different map patterns of same area.

S. Generalizes from data.

G. A number of factors--climate, surface features, natural resources, accessibility, and history--affect settlement and growth patterns.

S. Sets up hypotheses.

S. Tests hypotheses against data.

A. IS CURIOUS ABOUT SOCIAL DATA.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. Although culture is always changing, certain parts or elements persist over long periods of time.

2. The population of the Red River Valley increased very slowly until the coming of the railroads to the region; then it increased rapidly.

B. After the richness of the soil was discovered, the settlers began to farm the region, adapting their way of life to the resources which they found on the prairies.

1. The lack of trees created problems for the farmer, although it reduced the amount of work he had to do as compared to that facing those settling in forested areas.
    a. Farmers lacked logs and lumber to build houses. The few trees along streams provided only supports for sod roofs on sod houses.
    b. Farmers lacked enough trees for heating their homes in winter and for cooking; they had to supplement the logs cut from stream banks with twisted hay and buffalo chips.

Now compare the data on western Norway's weather with that of the weat
Minnesota and North Dakota Red River Valley. Are they similar? Would
new settlers be surprised in any way after reading the weather descrip
of Hjelm-Hansen about the Red River Valley?

24. Have pupils examine the Minnesota population maps of 1850, 1870, 1880
a population map of 1890. Ask: How much did the population of Minnes
grow before 1880? Between 1880 and 1890?

Ask: Why was the Red River Valley populated last? Discuss the means
transportation into the area and the dates of the railroad expansion.
railroad maps of 1869 and 1879. Look at picture of track-laying on th
plains. Show picture of early steamboat on the Red River.

Compare the population maps and the railroad maps, noting the growth o
railroads and the spread of the population at approximately the same t
Ask members of the class to state conclusions about the relationship b
the building of the railroads and population growth.

25. Say: Suppose you were an early settler in the Red River Valley. What
of house might you build. (If pupils suggest log houses, ask them whe
they would get the logs. Review a map of natural vegetation if necess
to remind pupils that the area was a plains area. However, point out
some willows grew along streams and rivers.) Also ask: What other pr
might you face because of the lack of many trees? Ask: How do farmer
today keep their cattle out of fields and where they want them to stay
(Barbed wire fences or electrified fences.) What is needed to make su
fences? (logs as well as wire). Say: In the early days in the valley
farmers didn't have barbed wire for fences or modern electrified fence
Suppose you had been one of these farmers. What could you have done w
your oxen and horses and cattle? Now that you have listed problems, c
you think of any advantages you would have had over the early wheat fa
in Minnesota? (If necessary, review where the earlier wheat farmers l
in terms of natural vegetation; use map.)

weather with that of the weather in ley. Are they similar? Would the er reading the weather description ey?	See "Selected Readings."
tion maps of 1850, 1870, 1880 with n did the population of Minnesota ated last? Discuss the means of es of the railroad expansion. View picture of track-laying on the on the Red River. road maps, noting the growth of the on at approximately the same time. sions about the relationship between tion growth.	Materials from Association of American Railroads, Washington, D.C. Robinson, Agriculture in Minnesota, pp. 42,46,63 85, 115 (population maps), and p. 37 (railroad maps of 1869 and 1879).
in the Red River Valley. What kind ggest log houses, ask them where natural vegetation if necessary ins area. However, point out that rs.) Also ask: What other problems ny trees? Ask: How do farmers n where they want them to stay? s.) What is needed to make such n the early days in the valley, es or modern electrified fences. s. What could you have done with t you have listed problems, can e had over the early wheat farmers e the earlier wheat farmers lived	Vegetation map in Borchert, Minnesota's Changing Geography, p. 24.

   c. Farmers had to herd cattle and oxen and horses to keep them out of the fields because they lacked the trees to make the log fences used in forested areas. At first they planted small trees around fields which finally grew enough to serve as fences. After the invention of barbed wire, they used some of the wood in these small tree fences for the posts needed for the more effective barbed wire fences.

2. Farmers took their old culture with them, adapting only in certain ways to the new environment.
   a. As soon as possible, they imported lumber to build frame houses.
   b. They used many of the same kinds of tools as before and kept their old forms of family and social structure.

Now have pupils read accounts of the sod-house era and t
disadvantages of the lack of trees. Return to the class
before they began their reading. Must they change their
light of the data they have just read? Why or why not?
the problems of fencing and fuel and the ways in which e
these problems. Show pictures of sod houses. Ask: Why
use buffalo skins for houses as the Indians did?

Now tell the class that after farmers had earned enough
placed their sod houses with frame houses. Ask: Where
been able to get the lumber? How would they get it to t
would they go to such an expense when their sod houses w

26. Ask: Do you think family life would have changed much w
the valley? Why or why not? What kinds of tools do you
have used?

Perhaps show film Pioneers of the Plains as a means of s
life on the plains.

27. Several pupils may wish to read books about early pionee
valley. They should report to class only on their conclu
questions raised in activity 26.

28. Have the members of the class write letters, supposedly
arrived immigrant to his friends back home. He should de
the Red River Valley, and his new home. (Later, another
written to the same people telling of the changes in the
after twenty-years--in 1890.)

-house era and the advantages and
urn to the class' suggestions made
hey change their hypotheses in the
Why or why not? Be sure to discuss
ways in which early settlers solved
uses. Ask: Why didn't the farmers
ans did?

i earned enough money, they re-
s. Ask: Where would they have
hey get it to their farms? Why
eir sod houses were fairly snug?

changed much when people went to
of tools do you think they would

as a means of summarizing early

ut early pioneer life in the
on their conclusions about the

rs, supposedly written by a newly
e. He should describe his trip,
Later, another letter might be
changes in the valley and farming

See "Selected Readings" for descriptions. Also see Hillbrand and Clark, Our Minnesota, pp. 143-144 (picture p. 144). See also filmstrip Pioneers of Minnesota, U of Minn. Hagg, Exploring Minnesota, p. 69; Denison, Minnesota Heritage, pp. 121, 152; Minnesota Historical Society negative #3062 (Q/p.62)

For picture of frame house, see Heilbron, Thirty-Second State, p. 165.

Film: Pioneers of the Plains, E.B.F., 11 min.

See bibliography for books of fiction.

S. Gains information by studying pictures.

S. Interprets map symbols in terms of map legend.

tures.

3. A number of settlers developed bonanza wheat farms.

4. Some farmers remained small land-owners, although most obtained larger farms than the average for Minnesota at that time.

f

29. Now point out that class will examine in more detail the bonanza whea
farms which developed in the area. Project pictures of bonanza farmi
discuss them with the class. Ask pupils to note such things as the s
the farms, the type of crop (wheat), the type and quantity of machine
the flatness of the land, the railroad train and tracks running throu
farm land in one of the pictures. Relate the type of crop to what pu
learned earlier about the growth of flour milling in Minneapolis.

Have the class read the description of bonanza farming in Kelsey. As
Would the pictures you have seen and this description attract farmers
this valley? Review the way in which the railroads helped to establi
these bonanza farms to attract people into the area. Discuss the mea
of "bonanza."

30. Project pictures showing the small farms and the early settler breaki
sod with his oxen. Ask: Do these pictures look much like the pictur
descriptions of bonanza farms? How do they differ? What crop did th
small farmers grow?

31. Point out that only some of the farmers ever developed the really lar
bonanza farms. Tell pupils about the homestead act. Then ask: How
would most of the farms be even among small farmers? Why? Prepare a
of average size farms in Minnesota in 1900 by projecting the map from
Reconnaissance Atlas of Minnesota Agriculture, coloring in the areas
lines, and preparing a color key. Ask: How did the farm size in the
River Valley compare with average size farms in other parts of Minnes
1900?

n more detail the bonanza wheat
ject pictures of bonanza farming and
s to note such things as the size of
e type and quantity of machines used,
train and tracks running through the
te the type of crop to what pupils
ur milling in Minneapolis.

Heilbron, The Thirty-Second State, p. 170.
Minnesota Historical Society negatives: #1085 ($\frac{HD}{p.40}$)
#6020 ($\frac{HD1}{137}$); # $\frac{FM6.9}{p.7}$

Hillbrand and Clark, Our Minnesota, p. 195.

onanza farming in Kelsey. Ask:
s description attract farmers to
e railroads helped to establish
nto the area. Discuss the meaning

Kelsey, Red River Runs North, pp. 204-207.

s and the early settler breaking the
res look much like the picture and
hey differ? What crop did the

Heilbron, The Thirty-Second State, p. 169.
Filmstrip: frames 41, 46, 47 of Pioneers of Minnesota, U of Minn.; Denison, Minnesota Heritage, pp. 156, 157.

ever developed the really large
mestead act. Then ask: How large
all farmers? Why? Prepare a map
00 by projecting the map from the
lture, coloring in the areas between
How did the farm size in the Red
arms in other parts of Minnesota in

Borchert, A Reconnaissance Atlas of Minnesota Agriculture.

G. Man changes the face of the earth.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

S. Makes graphs to present information.

S. Draws inferences from tables and graphs.

Understands concepts of bushel, acre, and yield per acre.

S. Sets up hypotheses.

G. Soil in a particular place is affected by the type of basic rock in the region; the climate; vegetation; erosion; wind, glaciers and rivers which move soil; and by how man treats the soil.

G. Man changes the face of the earth.

G. Nature changes the character of the earth through biotic processes.

G. Other things being equal, the price of a good rises when the good is in short supply as compared to the demand for the good and falls when the supply of the good is larger than the demand at the existing price.

5. The fa
ditche

C. After som
and high
itable.

1. Yields
produc

2. The co

3. Prices
throug

4. Wheat
of dro

5. The farmers gradually cooperated on digging drainage ditches in order to make use of more of the land.

C. After some years of greatly increased wheat production and high prices, bonanza wheat farming became unprofitable.

1. Yields of wheat per acre dropped, and so did wheat production in the area.

2. The constant planting of wheat reduced soil fertility.

3. Prices dropped as more wheat was being produced throughout the country.

4. Wheat production dropped for a time in part because of drought and a grasshopper plague.

32. Ask: Suppose you owned valley land which was not too well drained. Wha might you do? Have a pupil report on the way in which farmers drained t land in the valley. Also show the class a map of drainage ditches in Minnesota. Ask: Why did the farmers go to such labor and expense?

33. Examine tables of wheat production (bushels produced and yields per acre and maps of wheat production. Ask the class to compare the yield per ac over the years with the production in bushels. Look also at the amount acreage in wheat. What has happened to the yield of wheat? What might have caused this drop and the drop in production? Have the class graph these figures for easier comparison. They should leave room for the 191 figures to be added later. Be sure that the pupils understand the conce of bushel and acre. Have a bushel basket in the classroom and use some local area the size of an acre as a concrete example of how large an acr

Ask: If you had been a farmer in the Red River Valley what would you ha done in this situation? (Let pupils make guesses to check in the next p of the unit.)

34. Tell the class that wheat was grown year after year in the Red River Val Ask: What happens to the soil when one crop is grown on it year after y Review the concept of soil exhaustion (studied earlier in the overview u Ask: What would happen to the Red River Valley soil after years of whea growing? What would you expect to have happen to the average number of bushels produced per acre in the area? Check the graphs of wheat produc once again.

35. Explain to the class that prices of wheat dropped in other parts of the country and in the world because of greatly increased production in many places. Ask: Why would this price drop affect what farmers would grow? Point out, too, that there was a drought in the Red River Valley and als a serious grasshopper plague for several years. (Perhaps read brief desc tions of the plague and show picture of men fighting the grasshoppers.

s not too well drained. What
y in which farmers drained the
ap of drainage ditches in
such labor and expense?

Borchert, Minnesota's Changing Geography, pp. 49-50.

produced and yields per acre)
to compare the yield per acre
s. Look also at the amount of
yield of wheat? What might
tion? Have the class graph
hould leave room for the 1910
pupils understand the concepts
the classroom and use some
example of how large an acre is.

Robinson, Economic History of Agriculture in Minnesota.

See "Selected Readings."

ver Valley what would you have
esses to check in the next part

er year in the Red River Valley.
is grown on it year after year?
ed earlier in the overview unit).
ley soil after years of wheat
en to the average number of
the graphs of wheat production

pped in other parts of the
ncreased production in many
ct what farmers would grow?
he Red River Valley and also
s. (Perhaps read brief descrip-
ighting the grasshoppers. Ask:

Hillbrand and Clark, Our Minnesota, p. 197-198.

G. People in most societies of the world depend upon people who live in other communities or countries for certain goods and services and for markets for their goods.

G. Specialization makes for interdependence.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. Man changes the face of the earth.

G. The significance of location depends upon cultural developments both within and outside a country or region.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

S. Draws inferences from tables and graphs.

G. Types of agriculture in a region depend upon man's cultural values, perceptions, and technology as well as upon climate, soils, and topography.

V. We look at hov

A. Farmers hav
soil exhaus

B. Farmers sea
duce in the
replaced by

. We look at how men live in the Red River Valley today.

A. Farmers have learned to rotate their crops to prevent soil exhaustion.

B. Farmers searched for other crops that they could produce in their areas. Single-crop farming has been replaced by diversified farming.

What effect would the drought and grasshoppers have upon wheat production in the valley?

36. Ask: What have you seen in the Red River Valley thus far which you think would have a permanent effect on the valley? Why have the bonanza farmer and others in the area been able to change the valley? How have these changes affected the relations of the valley with other parts of the upper midwest region, the U.S. and the world?

37. Now tell pupils that they are going to look at the Red River Valley today and the reasons for changes in the valley.

Refer again to the table of wheat production and have pupils add the figures of 1910 to their graphs. Ask what had happened to wheat acreage, wheat production, and to the yield per acre by 1910. Then discuss: How could the soil be made more productive? Have several class members investigate ways of improving soil fertility and report their findings to class.

38. Now have pupils look at the figures for wheat production after 1910 and discuss. How can they account for the changes? See "Selected Readings."

39. Project tables showing increase in production of oats, barley, flax, and potatoes in the early 20th Century. Have the class look at a table showing wheat production as a percentage of total production of wheat, barley, flax, and potatoes. Ask: What had happened to importance of wheat in the valley? Why do you think farmers bagan to grow other crops besides wheat? See "Selected Readings"

S. Sets up hypotheses.

S. Draws inferences by comparing different map patterns of same area.

G. Differing crops need differing amounts of rainfall and differing temperatures and number of frost-free days in order to grow.

G. Output can be increased by technological progress in the development of tools and machines and power to replace manpower.

G. Climate may set up limitations upon man's activities given a specific level of technology, but man has learned to overcome many of the earlier limitations.

C. Fa
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D. Mo
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mounts
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order

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ools and
npower.

C. Farmers now use huge machines to farm in the Red River Valley; to make such machines profitable, farms must be large.

pon
c level
ed to
itations.

D. Modern man has used his knowledge to develop hardier strains of seed to overcome the limitations of climate.

40. Ask: Why did the farmers choose to grow the particular c
oats, flax, and potatoes--and later sugar beets in the Re
Have pupils make guesses to check as they proceed in the

Have individual class members gather information about th
ments of these crops and make a series of charts on them
bulletin board.

41. Now have pupils look at maps of the climate, rainfall, an
in the valley (noting the small amount of precipitation a
season in the valley). Then do the following:

a. Ask: How do you think farmers can overcome the disadv
growing season and dryness? Also ask: What part of t
the best for the farmer to get precipitation? Look at
show when precipitation occurs in the valley. In what
valley have the most precipitation? Note that althoug
precipitation is low, it occurs at the right time of t
many farmers.

b. Ask: In what season of the year are the days longer t
the northern hemisphere? How would longer days help o
of the growing season in the Red River Valley?

c. Ask: Do the conditions in the Red River Valley meet t
for growing barley, oats, flax and potatoes? Have pup
made charts before deciding.

42. Show pupils pictures of farm machines used on modern Red
Ask: How do these machines compare with the ones used by
by the small farmers in the bonanza period? What does th
amount of money a farmer must have to go into farming in
it pay to buy such machines to farm a small farm? Why or

43. Ask: Is man always limited by climate as to what he grow
overcome some limitations of climate? Let pupils make gu
time.

e particular crops of barley,
eets in the Red River Valley?
roceed in the unit.

ation about the growing require-
harts on them to place on the

, rainfall, and growing season
recipitation and short growing
ng:

See maps used in part one of unit.

ome the disadvantages of short
What part of the year would be
tion? Look at the maps which
lley. In what months does the
that although the amount of
ight time of the year to help

days longer than the nights in
er days help offset the length
alley?

Valley meet the requirements
oes? Have pupils look at pupil-

n modern Red River Valley farms.
ones used by bonanza farmers?
What does this mean about the
o farming in the area? Would
farm? Why or why not?

Szarkowski, Face of Minnesota, pp. 248, 249, 251.

what he grows? How can he
pupils make guesses at this

Borchert, Minnesota's Changing Geography, p. 43 (map), p. 42 (description

Have pupils look once again at a map used in the Twin Citie
shows northward movement of corn-growing in the U.S. Then
read the section in Borchert which tells of the development
so that it could be grown further north. Ask: Do you thin
years from now the boundary for corn-growing will have exte
Why or why not?

Ask: Why don't the farmers in the Red River Valley raise a
What crop is usually best to feed beef cattle or hogs? (cor
that soy beans are also fed to cattle. Does this region ha
ditions for growing corn given present corn varieties? Wou
for this region to develop into a hog raising area sometime
If so, how?

Read aloud a description of the development of hardier wint
would this development help farmers in the Red River Valley
tent does climate limit man's use of an area?

44. Ask: What is the meaning of "cash crops?" (If pupils do n
Then ask: Why do you think the farmers in this region want
crops? What crops produced in the region are cash crops?
class read the section on cash crops in Borchert.

45. Have pupils read Borchert's description of cash crop proces

46. Have pupils use the Sugar Beet Kit to find out more about h
are grown and processed, how the sugar beets are rotated wi
the uses of the plant, and how all parts of the plant are u

at a map used in the Twin Cities unit. The map corn-growing in the U.S. Then have the class t which tells of the development of hybrid corn urther north. Ask: Do you think that twenty for corn-growing will have extended northward?

of development of hybrid corn).

in the Red River Valley raise animals for market? o feed beef cattle or hogs? (corn). Explain to cattle. Does this region have the right conven present corn varieties? Would it be possible into a hog raising area sometime in the future?

the development of hardier winter wheat. How farmers in the Red River Valley? To what ex- 's use of an area?

f "cash crops?" (If pupils do not know, explain.) the farmers in this region wanted to grow cash in the region are cash crops? Perhaps have the ash crops in Borchert.

Borchert, Minnesota's Changing Geography, pp. 52-53.

description of cash crop processing.

Borchert, Minnesota's Changing Geography, p. 80.

eet Kit to find out more about how sugar beets the sugar beets are rotated with other plants, ow all parts of the plant are used.

Sugar Beet Kit from

Also see pictures in Borchert, Minnesota's Changing Geography, p. 51, pp. 81-82 and map on p. 83; Heilbron, Thirty-Second State, p. 230.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. In general people in this country wish to sell their labor, land, capital, or goods for the highest incomes possible in order to obtain the largest amount of desired goods and services.

G. Demand affects the supply of goods and services by affecting prices. Other things being equal, the higher the price for a good, the larger the quantity which will become available for sale.

G. Types of agriculture in a region depend upon man's cultural values, perceptions, and technology as well as upon climate, soils, and topography.

E. The climate
River Valley
farmers grow
given time,
diversify an

G. Population is distributed unevenly over the earth's surface.

F. The populati
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farms; popul
cities.

G. People who live in one community or region depend on each other for different goods and services and markets for goods and services.

G. In the towns
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E. The climate and topography of the land make the Red River Valley a good cash crop farming region. The farmers grow what is the most profitable crop at a given time, although they also consider the need to diversify and rotate crops.

F. The population of the Red River Valley is sparse in most of the region because of the many large family farms; population is heavier in a few large towns and cities.

G. In the towns and cities of the region, the ways in which people make a living are related to the needs of the farmers who live around the towns.

47. Now ask: Suppose you are a farmer in the Red River Valley.
any number of cash crops. How would you decide which ones t
to what pupils learned in fourth grade course about effects
supply. If pupils have not studied this course, use several
the first unit in the fourth grade course in order to develo
of demand and ideas about how demand affects supply.)

48. Play a tape in which a Red River Valley farmer explains how
what crops to grow.

49. Show pupils a picture of a Red River Valley farm and ask: W
think a population map will show us about population densiti
River Valley? Why?

Now have the class examine a present-day population distribu
Minnesota. Ask: What is the average population density alo
River? Compare the population maps of 1870, 1910, and 1960.
symbols on each map.

50. Look at a political map of the region, noting large towns and
pupils locate the largest cities in the Red River Valley.

he Red River Valley. You can raise u decide which ones to grow? (Relate ourse about effects of demand upon s course, use several articles from se in order to develop the concept fects supply.)	
farmer explains how he decides	Tape from Center's Office.
lley farm and ask: What do you t population densities in the Red	Borchert, *Minnesota's Changing Geography*, p. 51 (picture).
population distribution map of pulation density along the Red 870, 1910, and 1960. Note use of	Borchert, *Reconnaissance Atlas of Minnesota Agriculture*. Belthuis, *Minnesota in Maps*.
oting large towns and cities. Have Red River Valley.	Roadmap of Minnesota or Political map of Minnesota.

G. Towns need means of shipping goods in and out; they are likely to grow up where transportation is good, particularly where different types of transportation meet.

G. Specialization makes for interdependence.

G. People in most societies depend on people who live in other communities for certain goods and services and markets for their goods.

G. The significance of location depends upon cultural developments both within and outside a country or region.

G. Man uses his physical environment in terms of his cultural values, perceptions and level of technology.

VI. Man has used the Red River Valley very differently in different periods. Today the region is affected greatly by what happens to markets for products in the country as a whole and in the world.

Now have pupils look at the list of manufacturing firms in a few of these key cities such as Moorhead, Crookston, and East Grand Forks. Ask: Why are these particular businesses located in this region? What connection do they have with the farmers in the area? What other small businesses not mentioned would probably be found in these Red River Valley towns that would help the farmers?

51. Have pupils read Borchert's description of the farm-trade town. They should also read descriptions of the cities of Moorhead and Crookston. Then ask: How do these towns fit the description of a farm-trade town? Bring out the fact that Moorhead has developed from a stopping-off place on the way to St. Paul, to an important town with a large sugar refinery, a variety of industries, and several higher educational institutions, making it an important city for the local and regional population.

52. Have the class refer to the table in Borchert which tells the ways in which people worked in Minnesota towns. They should look at the material on East Grand Forks, Moorhead, and Crookston and compare the occupations with those in towns like International Falls and Chisholm which have different needs.

53. Have pupils look at the list of manufacturing companies once more to identify some which need materials that are unavailable in the Red River Valley. Divide the class into groups to investigate the sources of these materials. They could also investigate markets for products, and the reliance of the population on products that are not produced locally. Then discuss: How has the Red River Valley's dependence upon other places changed over the years? Why?

54. Review pictures and maps which will illustrate the progressive changes in the Red River Valley, and discuss with the class e.g. Show once more a physical map of the region, a map showing Lake Agassiz's location, selected pictures of Indian life, fur traders bartering with the Indians, Red River carts, maps of railroads, sod houses, early farmer turning sod with oxen, bonanza farm, population maps, political map of present-day modern equipment, and aerial view of farms in the Red River Valley.

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Grand Forks. Ask: Why
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See "Selected Readings."

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Borchert, Minnesota's Changing Geography, pp. 74-77.
Also, see "Selected Readings" for descriptions of Moorhead and Crookston.

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Borchert, Minnesota's Changing Geography, pp. 184-185.

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G. Man changes the face of the earth.

G. Nature changes the character of the earth through physical and biotic processes.

S. Generalizes from data.

55. Select a panel of from 4 to 6 students to present a discussion and then lead the class discussion on two points: What has been the effect of the valley on the men who have lived there? What has been the effect of men on the valley? How did nature itself bring changes to the area?

    Have the panel chairman lead a general class discussion on the following questions:

    a. Why have men in the 20th century done more than the early settlers and farmers in the 19th century to change the valley?

    b. What knowledge and abilities have helped men to change the valley?

56. Have pupils draw a mural telling the story of change in the Red River Valley.

TEACHING THE GEOGRAPHY OF THE RED RIVER VALLEY

Fredric R. Steinhauser

INTRODUCTION

No area in the United States has a richer history than that of the Red River of the North. It stands out clearly as an area of the United States, viewed from almost any angle. Its settlements date back beyond even the beginnings of Minneapolis and St. Paul.

The Red River Valley is a part of the interior lowlands of the United States. It, like the Upper Midwest of which it is a part, has no mountains. In fact, its topography is so distinctive that the Red River Valley is normally set off as a separate unit of study. The land is as flat as a table top. It is so flat that heavy rains have difficulty in draining away to the rivers.

One of the first questions which should be answered concerns the "how" of this flat area. How did it get this way? All of the area of northwestern Minnesota, northeastern North Dakota and Manitoba in Canada drained northward into Hudson Bay. This drainage area is usually identified as the Red River of the North. During the glacial period, a large glacier flowed southward
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EACHING THE GEOGRAPHY OF
THE RED RIVER VALLEY

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southward over this drainage system and blocked the normal drainage pattern to the north. As a result, the drainage waters had to flow southward into the Glacial River Warren in the valley of the present Minnesota River. As the glacier melted and retreated, a huge lake formed. This lake was called Lake Agassiz. The farther north the glacier melted, the larger and deeper the lake became. The lake finally became 700 miles long and covered 110,000 square miles. The lake at Fargo-Moorhead was 200 feet deep, and farther north into Canada was 600-700 feet deep.

Rivers continued to pour water, sand and silt into this lake. The latter settled to the bottom and formed flat layers. Several thousand years ago, this glacial lake finally drained out to the north, forming the Red River of the North, as we know it today. These lands, once covered with water, remain flat, the result of the deposition and reworking of the sediment by the lake waters. (For additional information, see Minnesota's Rocks and Waters by George M. Schwartz and George A. Thiel, "How the Red River Valley was Formed" by Peter Jenson in the Gopher Historian, Fall, 1959 and Minnesota's Changing Geography by John R. Borchert.)

Most of the silt which was deposited in the lake bottom was clay. As soon as the lake drained, nature began its process of soil formation. As we saw on the climate maps of the United States, which included heat resource and moisture, this area is on the edge of the drier climates and receives about 20-22 inches of precipitation a year. The growing season in this area is 130 frost free days in the south to 100 days in the north. This combination of heat and moisture produced the prairie grasslands which are so well known to the people of western Minnesota. Hundreds of square miles of this flat grassland were visible, unbroken by hills or forests.

Although there were deciduous hardwood trees along the sandy strip on the eastern edge of the Red River Valley and along some of the stream lines as far north as Crookston, beyond that was only the prairie. Under natural conditions, the wild grasses of the prairie grew as high as 3 and 4 feet. The roots or sod were often a foot thick. This process of grasses growing in spring and summer and decaying in fall, resulted in some of the most fertile black prairie soil in the world. This is the condition in which the first Indians found the Red River Valley when they arrived.

EARLY PERIOD IN THE RED RIVER VALLEY

We know that man inhabited Minnesota for many thousands of years. The Indian was found in Minnesota and written about in the first accounts of the white explorers. Two tribes, the Chippewa and the Sioux, were the main occupants of Minnesota. The Sioux originally lived in most of the forested area in the eastern part of the state but were gradually driven westward by the Chippewa, who migrated from the St. Lawrence River area. The war between the Sioux and Chippewa continued during the time of the white explorer. Finally, the Sioux were driven out of the forested area of Minnesota onto the plains.

One purpose of this study of the Red River Valley is to see how this area was perceived by the various culture groups that lived there at different periods in the past. Our first interest is with the Sioux. The Sioux originated somewhere in eastern United, probably in Ohio. Through the course of their history they were forced further west until they were living in that part of Minnesota which was covered by deciduous hardwood forest. (See natural vegetation map of Minnesota). They were not farmers, although they did raise some corn and pumpkins, but were rather hunters, fishers and gatherers.

When the Sioux were forced out onto

the prairie, their environment changed. Their familiar food sources were gone. Bark for their traditional homes and canoes was no longer easily accessible, and wood for fire was scarce. The Sioux influenced by their cultural background, observed possibilities in this prairie land which they began to exploit immediately.

Given their culture, the Sioux saw the buffalo herd as their main salvation on the prairie. They had hunted the buffalo to some extent before; now the herds of buffalo meant meat for food, skins for homes and clothing, and dried manure for fuel. Changes took place in their diets, habits and customs. Their diet of wild rice, berries, fish and timber game was exchanged for a lighter transportable tepee made of poles and skins. Their beasts of burden (dogs and sometimes their wives) gave way to the horse. The earlier Sioux had no horses. The horse could carry a heavier load, and was fast enough to catch the buffalo. The horse also took the place of the canoe, which was little used once the Indian came to the prairie.

As the Indian tribes moved onto the plains, they were forced to make changes in their pattern of living. The transition was easier for the Sioux because they were somewhat nomadic and their hunting parties had often hunted buffalo on the plains to supplement their timber

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game. At these times, a light-weight tepee covered with buffalo skin was used. During hunting trips the Sioux learned to make pemmican, a dried buffalo meat, which was later to be in demand by the early white man.

A number of things need to be said at this point about the Indians and the Red River Valley. First, the resource material is very limited. Attention is drawn to the bibliography found at the end of the paper. It is apparent immediately that factual data about the Indian both during the time he lived in the forest and while on the prairie is limited in quantity and in many cases of questionable quality. Much Indian history is intermingled with myth and legend. No history was written by the Indian. The material available comes from contact with the white man. It usually covers some specific incident and differs greatly depending upon what the writer saw or thought. Second, the movement of the Indian from the forested area of Minnesota onto the prairie was further complicated by the arrival of the white trader who added guns and liquor to the process of the Indian's change from a forest to a prairie dweller.

A third point concerns the time limit for teaching this material. Based on the time available, only 3 or 4 days may be spent on this early period of the Red

River Valley. This would break down into two days for a study of the site and its physical characteristics and two days to picture the Indian as he perceived and used the Red River Valley for a home.

The major points which should be covered are divided into two groups, (1) the characteristics of the site and (2) how the Indian used the area to make a living. In the first phase, the student should see the location of the Red River Valley in the world, on the continent of North America, in the United States, and in Minnesota. He should see that this area is a part of the interior lowlands but that it is very distinctive in its flatness. He should know that nature changed this area greatly from how it had looked for thousands of years to this flat area and that the flatness is the result of glaciation. A knowledge of how this change took place is essential. The student should also see how nature changed this newly formed area into a prairie grassland, as a result of the heat and moisture available at this particular place.

In the second phase, the student should see this flat grassland occupied by the Indian--an Indian who had a culture developed in the forested areas of North America. This inhabitant was a

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hunter. His main support, as he saw it, was the buffalo. He was nomadic and moved from place to place. His home and clothing were made of materials available to him--buffalo skins. His food was mainly buffalo meat. He made no use of the soil because he was not a farmer. He did use sod occasionally for making a shelter.

WHEAT BONANZA PERIOD IN THE RED RIVER VALLEY

The second permanent settler in the Red River Valley was the white farmer. He came from eastern United States or directly from Europe. His cultural background was European. This white man, like the Indian, came from a physical environment that was mainly covered by forests. In the past, he had ignored the prairie grasslands of the United States as he believed that land which couldn't support trees was rather worthless as farm land. He was also limited on the prairie by the lack of tools that could efficiently overturn the sod.

The reason for studying this era in the Red River Valley is to observe how the newly arrived white men perceived this area (i.e. evaluated its possibilities and limitations) as a place in which to make a living. Although there were white men in the area previously, most of these were transients of the trader-explorer variety who were not in the Red River Valley for the purpose of using the land in making a living.

This middle period in the development of the Red River Valley is the "Wheat Bonanza" period and covers mainly the years from 1870 to 1900. After 1900, diversification of crops was forced upon the farmers by poor wheat yields and economic reasons, including lower prices for wheat. These conditions also doomed most of the bonanza farms which were divided and sold, in most cases, to individual farmers.

Before 1870, there was little incentive for the movement of settlers into the Valley. After that date, a series of events set the stage for rapid settlement of the entire area. Crop failures in Europe created a demand for American wheat, raising wheat prices, and causing many Europeans to look favorably upon immigration to new lands in the United States. Imrpovements in the flour manufacturing machinery created the demand for hard wheat which grew well in the Valley. Increased population in both United States and Europe created the need for new areas of settlement. Most important, it was demonstrated that the prairie grasslands of the Red River Valley contained some of the best farmland in the world.

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The agricultural conquest of the Red River Valley is closely tied to the predicament in which the railroads found themselves at this time. The railroads had been given large acreages of land in exchange for building railroads and developing new areas. Some railroads, like the Northern Pacific, were bankrupt. They needed something to increase both freight and passenger service on their lines. In this light, the railroad men looked over the Red River Valley to see what could be done with it. Their ideas were successful in bringing more than 200,000 Americans, Canadians and Europeans to settle the area before 1900.

In order to attract interest, James B. Power and a number of other land agents for the railroads put their efforts behind some demonstration farms, not family sized farms, but something huge -- bonanza farms. One of the biggest success stories was that of the Cass-Cheney farm, operated by Oliver Dalrymple. Mr Dalrymple, a well-educated Pennsylvania lawyer, came to St. Paul in 1865. Working with a group of investors who exchanged depreciated North Pacific Railroad bonds for railroad lands, he began a farming operation in the Red River Valley. Three farms were established, total holdings grew to 100,000 acres and 65,000 acres were put under cultivation. The growing of wheat was a huge success. The story spread rapidly, attracting capital and men from everywhere. The price of wheat went from 50 cents a bushel to $1.50. Minnesota's wheat crop of 1860 was 2 million bushels and increased to 19 million bushels by 1870.

The Bonanza farm was a factory on the land. Thousands of acres were worked by gangs of men using the latest machinery. On some farms, 40 plows were in operation at once, batteries of reapers and steam threshers were used. Hundreds of transient laborers using horses and wagons loaded two trains a day with wheat for the Minneapolis flour mills. The farms had medical and nursing services, private churches and ministers, race tracks and race horses, and some their own steamboats to haul the grain to the nearby cities and railroads. (For additional information, see the bibliography at the end of paper, and especially the Gopher Historian for Fall, 1959.)

Here, again, was a new way of life for the Red River Valley. It was conceived by white men with European backgrounds, financed and operated within the framework of the world's economy and staged on the flat lake plain of the Red River Valley.

One of the major concepts of geography concerns the processes of change. These processes are the result of the actions of both man and nature. The Red

River Valley, like all other areas of the world, had gone through many changes before the coming of man. Now with the coming of man, the changes were to continue. The removal of the Indian and the buffalo, changed the picture. The establishment of the railroads, the building of cities and highways, the turning of the grasslands into farmlands and the digging of ditches to drain the land all brought about far-reaching changes which were to continue the development of the area.

After studying this second phase in the use of the Red River Valley, the pupils should be able to understand how man's culture affects his use of the physical environment. They should also be able to see how the processes of change are working all of the time and that man is a definite part of the process.

PRESENT DAY RED RIVER VALLEY

The third period in the study of the Red River Valley which concerns the student is that of the present day. Here again, we must remind ourselves of the purpose for which we are studying this area. First, we are learning about a specific place on the earth's surface. In doing so, we see that it is a place with a distinctive character. In this case, the Red River Valley stands out as an area which is not duplicated anywhere in the world -- the combination of landform, climate, economy, etc. is different from any other world area.

Secondly, we are interested in observing how different groups of people who lived here perceived this area as a place in which to make a living. We know that basically the physical conditions have changed little from the days of the Indians. The flat land, the length of the growing season, the amount of precipitation, etc, are about the same as when the Indians moved to the valley. However, what we see today is greatly different from what it was in the Indian days, and significantly different from the wheat bonanza period. We observe that the Valley has numerous possibilities and great versatility but that man has chosen to do what he is doing. What he does appears to him to be the best choice within the confines of his culture, including economy, and the physical environment.

By 1900, it was apparent that the processes of change had made Wheat Bonanza farming obsolete in the Red River Valley. The diversification of crops was forced upon the farmer by poor wheat yields, a three-year drought, lower wheat prices and the gradual wearing out of the virgin soil by single crop farming. Other problems involved the absentee landlords who continued to take their money out of the valley without

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putting sufficient resources into schools, churches, governments, roads and other permanent improvements. In spite of the decline of the Bonanza farm, many Americans had moved to the Valley and were ready to make complete use of the many possibilities of the Valley.

Before teaching this section on the present day Red River Valley, it would be advisable to examine the following sources of material: Minnesota's Changing Geography by John R. Borchert, A Reconnaissance Atlas of Minnesota Agriculture by John R. Borchert, the Gopher Historian, Fall 1959 (covering the Red River), Atlas of Minnesota Occupancy by Brown and Tidemand, and Goode's World Atlas, most recent edition (see density of population map.)

The first conclusion which is reached from a study of the population density map of the United States and Canada is that the Red River Valley is in a population band extending from Chicago, Illinois through the Twin Cities and Winnipeg to Edmonton, Canada. The average population density is about 6 to 18 people per square mile. On either side of this band, the population density drops gradually to less than 2 people per square mile. (Also see Brown and Tiedman's Minnesota Population Map, 1960)

A second conclusion which can be made about population in the Red River Valley is that the Valley has lost population rapidly in the last decades. (See Brown and Tideman's Population Distribution Changes 1940 to 1960). Only thelarger cities have grown. This indicates that the change from the large bonanza farms to smaller farms has stopped and that farms are again getting larger, causing large numbers of farmers to leave the farm for jobs and homes in the cities. It appears also that the population of the Red River Valley is more dependent upon fewer and larger cities and lacks the smaller cities so commin in Southern Minnesota.

A third conclusion about the Red River Valley is that it is mainly a cash-crop farming region. Crop maps show the Red River as the southern beginning of the spring wheat belt. Barley, flax and oats are also common grain crops. These are concentrated in selected areas. Two of the most important specialty crops are sugar beets and potatoes.

A number of other statements should be made. The Red River Valley is different from Southern Minnesota and other adjacent agricultural areas. First, it has a cooler and drier climate which limits the growth of corn and soybeans. Second, it is mainly a cash crop region and does not specialize in animal agriculture. Third, it is an area which will grow numerous specialty crops and the farmers try many different crops, depending upon their market value.

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The bibliography at the end of this paper provides many more interesting aspects of present day life in the Red River Valley. For example, some of the larger cities could be studied to see what the people there are doing for a living. It is often true that what is happening around a city affects what people do in the city. Most of the cities will have a fourth of their working population in retail business, serving the large farm trade. Many of the cities will have industry processing the farm products as in the case of sugar refining. Many of the cities will provide needed services such as machinery repair, education, medical and legal services, and numerous others needed by the farming population.

As a culminating phase of the study of present day Red River Valley, it would be desirable to hold a class discussion concerning why the people in the Red River Valley are doing what they are doing. It should be clear that there is no one cause and the discussion should include a summary of the physical aspects of the area, the cultural background of the people, and present economic conditions in the United States and the world.

Appendix

Production Statistics
(in bushels)

	1880	1890	1900	1910
Oats	500,000	2,770,000	7,300,000	11,320,000
Barley	30,000	870,000	1,970,000	4,930,000
Potatoes	130,000	640,000	950,000	3,040,000
Flax		10,000	1,280,000	740,000
	660,000	4,290,000	11,500,000	20,030,000
Wheat	1,020,000	9,500,000	16,020,000	11,010,000
Total	1,680,000	13,790,000	27,520,000	31,040,000
% wheat is of total	60.5%	68.0%	59.0%	35.0%

Grade Five
Unit II: THE MIDWEST
SUB-UNIT C: THE MIDWEST AS A REGION

RESOURCE UNIT

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INTRODUCTION

The period of time spent on this sub-unit should be relatively brief. Pupils should be able to handle the map activities and analyze the region rather easily by using concepts, generalizations, and skills studied in the overview unit and in the sub-units on the Twin Cities and the Red River Valley. For this reason, more map activities are placed together than would be wise if pupils could not handle each one rather quickly.

This is a resource unit, and teachers should select activities and add to them or modify them in terms of the criteria suggested in the introduction to the Overview unit.

Although pupils will need to return to questions involving regionalization of the country, they can begin to analyze the regionalization pattern suggested in the overview unit. They can identify more clearly now than in the overview the criteria on which such regionalization is based. They should also be able to understand more clearly how other geographers might regionalize the eastern half of the country differently on the basis of different criteria and different purposes.

This unit should make progress toward developing th

CONCEPTS

1. Diversity-variability: pattern, region.

2. Location: situation, site (climate, landforms, soil type).

3. Cultural use of environment: farming (specialized* general, cash-crop, industrial crop*); manufacturing; technological and scientific developments; specialization; diversification; urbanization; population density and settlement patterns.

4. Change: physical, biotic, man-made (locks , hybrids*).

5. Interrelatedness: areal association, trade, interdependence.

GENERALIZATIONS

1. Precipitation is affected by factors such as distance from bodies of warm water, wind direction, temperature, ocean currents, and physical features which force winds to rise.

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Introduced for the first time in this curriculum. -courses or units within this course, with activiti understanding or to require pupils to apply concept gress toward developing the following objectives:

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2. Soil in a particular place is affected by the type of basic rock in the region; climate; vegetation; erosion; wind, glaciers and rivers which move soil; and by how man treats the soil.

3. Temperature and seasonal differences are affected in part by distance from the equator; temperature ranges are smaller near the equator than further from it.

   a. Places in the interior of continents tend to have greater extremes of temperature than places along the coast.

      1) The ocean and other large bodies of water do not heat up so rapidly as land nor cool so rapidly as land.

      2) Winds which blow over warm bodies of water carry warm air to nearby land areas.

time in this curriculum. Others are reviewed from earlier
his course, with activities designed to increase depth of
ire pupils to apply concepts or generalizations to new data.

4. Some things can be produced better in one place than in another because of climate, resources, transportation routes, access to resources, access to markets, people's skills, landforms, etc.

    a. Differing crops need differing amounts of rainfall and differing temperatures and number of frost-free days in order to grow.

    b. What can be grown is affected in part by the soil in an area.

    c. Grain crops are raised more easily on relatively flat lands than in hills and mountains.

    d. Some types of landforms hamper the construction of railroads and highways, although technological advances have overcome many topographic limitations.

    e. Factories must have some form of power to run machinery.

        1) Power for industry is obtained from a number of sources, including water power.

    f. Industry today is dependent upon iron and steel for machines even when the factory does not use steel as a resource in making its products.

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g. Today factories tend to locate close to the source of needed raw materials if these materials are perishable or heavier and/or bulkier than their finished product; factories tend to locate closer to their markets than to the source of needed materials if their products are heavier and bulkier than the raw materials, and if their products are perishable.

5. Towns need means of shipping goods in and out; they are likely to grow up where transportation is good, particularly where different types of transportation meet.

   a. A place needs cheap and rapid transportation in order to carry on much trade with other places.

   b. Inland water routes provide cheaper transportation for heavy goods than do railroads, trucks, or planes.

   c. Cities which become big trading centers tend to grow up where there is a break in transportation and so where goods must be moved from one type of transportation to another or from one company's transportation facilities to those of another.

6. Man uses his physical environment in terms of his cultural values, percep-

tions, and level of technology.

a. Climate may set up limitations upon man's activities given a specific level of technology, but man has learned to overcome many of the earlier limitations.

b. Types of agriculture in a region depend upon man's cultural values, perceptions, and level of technology as well as upon climate, soils, and topography.

c. The significance of location depends upon cultural developments both within and outside the area.

d. A number of factors -- climate, surface features, natural resources, accessability, and history -- affect settlement patterns.

e. Machinery and power make possible greater production per person.

f. New inventions and discoveries open up new fields of production.

g. Man changes the character of the earth.

7. People in most societies of the world depend upon people who live in other communities, regions, and countries for goods and services and for markets

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a. Specialization makes for interdependence.

b. Diversification of production makes a region less dependent upon price fluctuations for one product or upon the supply of specific resources.

8. Nature changes the face of the earth through physical and biotic processes.

9. Phenomena are distributed unevenly over the earth's surface, resulting in diversity or variability from one place to another.

   a. Population is distributed unevenly over the earth's surface; many of the land areas are thinly populated.

      1) Large cities are characterized by a large number of people per square mile.

10. A region is an area of one or more homogeneous features. The core area is highly homogeneous, but there are transitional zones where boundaries are drawn between different regions.

   a. Regions are delimited on many different bases, depending upon the purpose of the study. Some are delimited on the basis of a single phenomenon, some on the basis of multiple phenomena, and some on the basis of functional relationships.

SKILLS

1. Sets up hypotheses.

2. Tests hypotheses against data.

3. Applies previously-learned concepts and generalizations to new data.

4. Interprets circle graphs.

5. Interprets map symbols in terms of map legend.

6. Draws inferences from maps.

    a. Draws inferences from a comparison of different map patterns of the same area.

S. Interprets map symbols.

S. Sets up hypotheses.

I. The Midwest can be deliniated in part by physical features, even though soils differ considerably; some of the land is rough rather than very level or rolling, and climate varies somewhat.

S. Sets up hypotheses.

TEACHING PROCEDURES	MATERIALS
1. Say: Now we are going to turn to a brief examination of the Midwest as a whole. We will try to decide whether or not the Upper Midwest belongs in this region and if so, on what basis it can be included in this region rather than in some other.	
Show pupils Borchert's map of the Midwest region. Be sure that pupils understand the meaning of the different color shades on the map. Use the description at the bottom of the page. Have pupils identify the states and sections of the states which Borchert includes in the region. Ask: Why do you think only parts of the four western states are included? Let pupils set up hypotheses.	Borchert and McGuigan, Geog. of the New World, p. 117.
2. Ask pupils to collect and bring to class as many pictures as they can which show scenes in the Middle West. They should look for pictures which show physical features such as surface relief, indications of amount of precipitation and temperature, types of agriculture, towns, and large urban centers, types of industry, etc. Perhaps select a committee of volunteers to use these pictures in preparing a series of bulletin board displays as the unit progresses.	
3. Discuss the acreage and value of the land of the typical farm in this Midwest area. (Use either the chart or the maps constructed in the Overview unit.) Encourage the pupils to speculate why the farms in this area are smaller than those further west and why the land is worth more per acre. Which maps would prove to be of most use in trying to answer the above questions? Moisture map, growing season map, land-use map, physical map, or population map?	

S. Draws inferences from a comparison of different map patterns of the same area.

S. Applies previously-learned concepts and generalizations to new data.

G. Differing crops need differing amounts of rainfall ... in order to grow.

S. Sets up hypotheses.

S. Applies previously-learned concepts and generalizations to new data.

S. Interprets map symbols in terms of map legend.

G. Precipitation is affected by factors such as distance from bodies of warm water, wind direction, temperature, ocean currents, and physical features which force winds to rise.

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G. Temperature and seasonal differences are affected in part by distance from the equator;

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A. The Midwest has plentiful rainfall for growing crops, although the western edge is drier than the rest of the region.

B. The region is far inland from the oceans and has a continental climate; although there are temperature variations within the region, the range is not great.

1. The region has cold winters and warm to hot

4. Have pupils examine a moisture map. Let them compare this map with Borchert's map of the Middle West. What do they notice about the western border of the middle west region? (It practically coincides with the line dividing the moist from the dry area on the moisture map.) Ask: Why might this border be chosen to distinguish between the Middle West and the West? What might be some of the ways in which the differences in moisture would affect man's use of the land in the two areas? Review what pupils learned in the overview in order to develop a list of what pupils would expect to find as differences in land-use west of and east of the line separating the two regions.

5. Now ask: What factors influence the rainfall and moisture in the Midwest? Review what pupils learned in the overview. Project a precipitation map which shows more variations than Borchert's moisture map does. Let pupils identify differences in rainfall within the Middle West. Review reasons for these differences. How does the Upper Midwest compare with the Middle West as a whole in terms of precipitation?

6. Review what pupils learned in the Overview unit and the units on the Twin Cities about temperatures in the Midwest. Have pupils examine once more temperature maps of the Middle West in January and July. (Review use of isolines and color layers to represent temperature.) Ask: What is the range of temperature in winter? How can you explain the differences in the Middle West? What is the range of temperatures in summer?

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Moisture map on p. 21 of Borchert and McGuigan, Geog. of the New World.

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Precipitation map in Informative Classroom Picture Set on Midwest, p. 11 or Set on The South, plate 13. Or see Glendinning, et.al. Your Country and the World, p. 45; Whittemore, et.al., U.S., Canada, L.Am., p. 42.

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Deasey et. al., The World's Nations, p. 30. Or see Nystrom transparencies on Average Temperature.

temperature ranges are smaller near the equator than further away from it.

G. Places in the interior of continents tend to have greater extremes of temperature than places along the coast.

G. The ocean and other large bodies of water do not heat up so rapidly as land nor cool so rapidly as land.

G. Winds which blow over warm bodies of water carry warm air to nearby land areas.

S. Applies previously-learned concepts and generalizations to new data.

S. Sets up hypotheses.

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2. The northern regions do not have such hot summers nor such long growing seasons as the middle and southern partsof the region.

3. The Great Lakes are large enough to have some moderating influence upon temperatures in areas close to them.

C. Natural vegetation in the area differed; much of the middle and western parts of the region were prairies, while the northern part of the region was covered by coniferous forests and the eastern and southeastern parts by decidu-

How can you explain the differences? How can you explain the great range in temperature from winter to summer? How does th Upper Midwest compare with the Middle West as a whole in terms of temperature?

Have the class examine pictures which illustrate temperature range in the Middle West (e.g. winter scenes and scenes showing people sweltering in the summer time or outside in summer clothes at picnics, etc.) Use pictures in texts and other books as well as those brought in by class members.

Now have pupils examine a map of growing seasons. What differences are found in the region? (If possible use a map showing more variations than that found in Borchert.) How do you account for the slightly longer growing seasons close to Lake Michigan and Lake Huron as compared to land at the same parallel in Minnesota and South Dakota?

Also ask: How might temperatures affect farming activity? Have pupils set up hypotheses to test later.

Perhaps have all pupils write out their answers to these questions on growing seasons as a check on their ability to apply previously-learned concepts and generalizations and to read map symbols.

7. Have pupils compare a soils map, a map of glaciation, and a map of natural vegetation in the region. Review what pupils learned in the overview and the Twin Cities unit about glaciation. Then ask: What relationships do you notice between

differences? How can you explain the ure from winter to summer? How does the ith the Middle West as a whole in terms

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For examples of winter scenes, see Borchert and McGuigan, Geog. of the New World, p. 175; Informative Classroom Pictures set on The Midwest, plate 13.

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For maps of growing seasons, see Borchert and McGuigan, Geog. of the New World, p. 24; Plate 13 in Informative Classroom Pictures set on The South or plate 14 in the set on The West. Whittemore, et.al., U.S., Canada, L.Am., p. 92.

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For vegetation map see Borchert and McGuigan, Geog. of the New

S. Draws inferences from a comparison of different map patterns of the same area.

G. Soil in a particular place is affected by the type of basic rock in the region; climate; vegetation; erosion; wind, glaciers and rivers which move soil; and by how man treats the soil.

G. Nature changes the face of the earth through physical and biotic processes.

S. Sets up hypotheses.

S. Interprets map symbols in terms of map legend.

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D. Soils differ in the region largely because of glaciation and vegetation (and so because of climate); the soil in some parts of Illinois is loess.

E. The Midwest is a non-mountainous area, with large stretches of level land and some small hills.

1. The central and western sections of the region are level or gently rolling plains.
2. The northern, southern and eastern edges of the Northwest region are somewhat more hilly than the main farming area.

the soils and glaciation? between the soils and vegetation? How do you think the differences in soil within the Middle West might affect the choice of farm activity?

How does the Upper Midwest compare with the Middle West as a whole in terms of natural vegetation and soil?

8. Have pupils examine a physical map of the Midlle West or the United States to identify the different types of landforms i the region. Then let them examine Borchert's map of Surface Regions of the Middle West to check on their findings. How does the Upper Midwest compare with the Middle West as a who in terms of landforms?

9. Have pupils examine pictures which illustrate differences in vegetation and landforms in the different parts of the Middl West.

ion? between the soils and vegetation? differences in soil within the Middle choice of farm activity? dwest compare with the Middle West as atural vegetation and soil?	*World*, p. 131; or Nystrom Co. transparency. For soils map see Deasy et. al., *World's Nations*, p. 44; Glendinning, et.al., *Your Country & the World*, p.49. For map of glaciation, see McLaughlin, et. al., *The Heartland*, p. 30.
physical map of the Midlle West or the tify the different types of landforms in them examine Borchert's map of Surface West to check on their findings. How t compare with the Middle West as a whole ?	For map of Middle West see: Borchert and McGuigan, *Geog. of the New World*, pp. 122-123. For map of surface regions, see p. 129 of same book.
pictures which illustrate differences in rms in the different parts of the Middle	Use pictures from textbooks and from the Informative Classroom Picture set

S. Applies previously-learned concepts and generalizations to new data.

S. Sets up hypotheses.

G. Differing crops need differing amounts of rainfall and differing temperatures and number of frost-free days in order to grow.

G. What can be grown is affected in part by the soil in an area.

G. Grain crops can be raised more easily on relatively flat lands than in hills and mountains.

II. The Middle West produces tremendous amounts of food for itself and for other parts of the country; it is the most important grain and meat producing region in the U.S.

A. Various factors affect which crops can be grown in a certain area.

1. Although the length of growing season and available moisture are important factors to consider in deciding which crops should be grown, each type of seed has its own requirements; moreover, scientific developments have made it possible to grow some crops where they could not be grown earlier.

Perhaps show them a series of pictures and give them a dittoed test exercise with multiple choice items on each picture One item on each picture should focus upon the probable location in terms of sections of the Midwest. A second might focus upon type of vegetation or climate illustrated by the picture.

10. Show pupils the map showing farm land in the eastern part of the United States. Ask: How does the Middle West region compare with the Northeast and the South in terms of the proportion of land in farm land? What might account for the differences among these three regions?

11. Prepare a bulletin board display of actual samples of the var grains grown in the Middle West area. Couple the samples wit length of growing seasons, amount of moisture, type of soil, type of climate needed.

    Compare this information with the data presented on the growi season and moisture maps. Ask: In what parts of the Middle West would you expect each of the crops to be grown?

    Now have pupils test their hypotheses against maps showing d ferent farm products in the Middle West. Have them go throug their list of hypotheses, modifying them where necessary in t light of the map data. Ask: What factors might affect where crops will be grown other than climate?

    Have pupils compare maps of different agricultural products w maps of landforms or surface relief and soils. What relationships do they notice. Use pictures of farm equipment being u in relatively flat fields. Ask: Why is it easier to grow grain on flat areas than in hills or mountains?

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howing farm land in the eastern part of Ask: How does the Middle West region com- ast and the South in terms of the propor- land? What might account for the differ- ree regions?	Borchert and McGuigan, Geog. of the New World, p. 119.
oard display of actual samples of the various Middle West area. Couple the samples with the asons, amount of moisture, type of soil, and ed.	
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maps of different agricultural products with surface relief and soils. What relation- . Use pictures of farm equipment being used ields. Ask: Why is it easier to grow than in hills or mountains?	See landforms maps and soils maps used earlier. For pictures, see texts and Informative Classroom Picture set on The Mid-

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. New inventions and discoveries open up new fields of production.

G. Climate may set up limitations upon man's activities given a specific level of technology, but man has learned to overcome many of the earlier limitations.

G. Machinery and power make possible greater production per person.

west, plates 12 27, 31.

12. Show pictures of some of the products growing in the fields and being harvested.

See McLaughlin, et. al., The Heartland, pp. 17-19, 40-41, 46-47. Informative Classroom Pictures set on The Midwest, plates 12, 27, 31.

13. Invite an agricultural agent, a representative of a big seed company, or a college agricultural instructor to come to the class to talk about ways in which scientific discoveries have: (a) made it possible to plant certain crops in areas in which they would not grow earlier, (b) made it possible to increase output per acre for the same type of crops.

G. Man uses his physical environment in terms of his cultural values, perceptions and level of technology.

G. Phenomena are distributed unevenly over the earth's surface, resulting in diversity or variability from one place to another.

G. Types of agriculture in a region depend upon man's cultural values, perceptions, and level of technology as well as upon climate, soils, and topography.

G. A region is an area of one or more homogeneous features. The core area is highly homogeneous, but there are transitional zones where boundaries are drawn between different regions.

G. Regions are delimited on many different bases, depending upon the purpose of the study.

2. The farmer is interested not only in what crops will grow in an area but also in what crops and other farm products will give him the largest profits.

B. The Middle West can be regionalized according to farm products.

1. The relatively flat area of the central part of the Middle West is devoted largely to cattle and hog raising and is the main livestock feeding region of the country.
    a. Corn is raised primarily for feed for livestock, although some is grown for food.
    b. Farmers frequently plant soybeans also as a cash crop as well as for livestock feed.
    c. Farmers in some parts of the region plant winter wheat to alternate with the corn which they grow in the summer.

14. Perhaps show pupils the diagram in The Heartland which illustrates how hybrids are developed for particular purposes. Then ask: Would a hybrid developed for one part of the Middle West be the best seed to use in another section of the Middle West? Why or why not?

15. Invite a farmer who manages a large farm to come to the class to discuss the ways in which he decides how to select his crops and other farm products. Or read aloud sections of the article on "Plan for 'Leasing' of Pigs Pays Off" which describes how a farmer tries to run his farm in order to make a profit.

16. Now have pupils examine a map which regionalizes the Middle West in terms of types of agricultural production. Compare it with maps of temperature, moisture, soils, and landforms. Ask: To what degree do physical features seem to have affected how man uses the Middle West areas for agricultural purposes? Can you explain what is grown in the cash crop area only in terms of less moisture? Why or why not? (Review what pupils learned about the Red River Valley.) Can you explain the livestock production in the main farming area only in terms of physical features? Why not? (Review what the class learned about southern Minnesota in the Twin Cities unit.) What could happen to change what is produced in the main farming region of the Middle West?

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Youngblood, "Plan
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Minneapolis Tribune,
May 4, 1967, pp.1,14.

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G. Some things can be produced better in one place than in another because of climate, resources, transportation routes, access to resources, access to markets, people's skills, etc.

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G. Differing crops need differing amounts of rainfall and differing temperatures and number of frost-free days in order to grow.

G. What can be grown is affected in part by the soil of an area.

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2. Some of the northern areas in more hilly, wooded districts are devoted largely to dairy farming.

3. Some fruit raising is carried on close to Lake Michigan where the water tends to moderate temperatures.

4. Some of the districts on the southern and western edges of the Middle West are devoted primarily to growing cash crops, including wheat; farmers in the southern part of the Middle West tend to engage in general farming.

17. Perhaps have pupils read accounts of two different farms in the Midwest: in Iowa or Illinois and in southern Wisconsin. Afterwards discuss: How are these farms different? How are they alike? Have pupils examine pictures of live-stock producing farms.

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examine pictures of live-stock pro-

Borchert and McGuigan, *Geography of the New World*, pp. 121-128. (Ill. and Wisc.)
For other pictures, see McLaughlin, *The Heartland*, pp. 39, 42-43.
Whittemore, et.al., *U.S., Canada, L. Am.*, pp. 29-38 (Iowa and Wisc.)

G. Grain crops can be raised more easily on relatively flat lands than in hills and mountains.

S. Generalizes from data.

S. Interprets circle graphs.

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G. A region is an area of one or more homogeneous features. The core area is highly homogeneous, but there are transitional zones where boundaries are drawn between different regions.

18. Prepare a large circle graph which portrays the following data about how we use corn: feed to hogs 50%; cattle 28%; chickens 10%; people 3%; export 3%; and 6% is used for manufactured products. Give pupils a short exercise to see if they can interpret the graph. Then ask: Why is so much corn fed to livestock? Why don't people consume more?

19. Some of the pupils might read Borchert and McGuigan's account of farming on the edges of the Midwest in order to check on the ideas the class has acquired by studying the maps. They should report any discrepancies which they find between the text description and the class' conclusions.

Borchert and McGuigan, Geog. of the New World, pp. T32-T38.

G. Regions are delimited on many different bases, depending upon the purpose of the study. Some are delimited on the basis of a single phenomenon, some on the basis of multiple phenomena, and some on the basis of functional relationships.

G. Some things can be produced better in one place than in another because of climate, resources, transportation routes, access to resources, access to markets, people's skills, etc.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

S. Tests hypotheses against data.

G. Machinery and power make possible greater production per person.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

C. Most farms in the Midwest are highly mechanized.

1. The farms are becoming larger in size and like "food-factories".
2. The cost of labor spurs technological advances in agricultural implements.

20. Let several pupils prepare a bulletin board display showing the major agricultural products of the different sub-regions of the Middle West.

21. If pupils live in the Middle West, plan a field trip to a typical farm. Emphasis should be placed on the examination of machinery and the scientific nature of present-day farming. The importance of rotation of crops should also be brought out. Some appropriate questions would seem to be: What are some of the main problems the farmer has to face? Has he increased the size of his land holding during the last ten years? Does he need more land? How many workers does he need on his farm? How has farming changed over the last twenty-thirty year period?

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. Machinery and power make possible greater production per person.

S. Sets up hypotheses.

G. A region is an area of one or more homogeneous features; the core area is highly homogeneous, but there are transitional zones where boundaries are drawn between regions.

D. The Middle West differs from other regions in terms of the major types of agricultural activity carried on in the region.

1. It differs from the South where agriculture is devoted largely to industrial

What does he predict for the future?

22. Write to Minneapolis Moline, Hopkins, Minnesota for brochu
on the new types of equipment which are available for use
a typcial Midwest farm. Use them in a bulletin board disp
Then discuss how the work used to be done before the inven
of a particular piece of equipment. Why is more equipment
use today than even thirty years ago? Ask: If wages for
labor dropped 50%, would there be a speed-up or decline in
number of new labor-saving devices? What would happen if
wages rose 50%.

23. View and discuss the filmstrip, Then and Now in the Corn B
It emphasizes the importance of the invention of machines
making the large scale cultivation of corn possible.

24. Show pictures of some of machines which are now used in spr
ing and picking fruit in the Lake Michigan area. Ask: Wha
effect would the invention of such machines be likely to ha
upon fruit-growing areas in hilly regions?

25. Now show the class Deasy's map which regionalizes the easte
of the country according to agricultural production. How d
Middle West differ from the South? from the Northeast? No
pupils look at the Informative Classroom Picture map of ag
tural regions. Or use the map of farming types in Whittemor
Ask: How does the Middle West differ from the plains

dict for the future?

olis Moline, Hopkins, Minnesota for brochures of equipment which are available for use on t farm. Use them in a bulletin board display. the work used to be done before the invention piece of equipment. Why is more equipment in ven thirty years ago? Ask: If wages for farm %, would there be a speed-up or decline in the bor-saving devices? What would happen if farm

the filmstrip, Then and Now in the Corn Belt. e importance of the invention of machines in scale cultivation of corn possible.

Filmstrip: Then and Now in the Cornbelt, E.B.F.

some of machines which are now used in spray- ruit in the Lake Michigan area. Ask: What invention of such machines be likely to have ng areas in hilly regions?

For pictures, see McLaughlin, et. al., The Heartland, p. 45; Informative Classroom Picture Set on The Midwest, plate 30.

ss Deasy's map which regionalizes the eastern part ccording to agricultural production. How does the er from the South? from the Northeast? Now have he Informative Classroom Picture map of agricul- use the map of farming types in Whittemore. e Middle West differ from the plains

Deasy et.al., The World's Nations, p. 42.
Informative Classroom Picture Set

crops such as cotton and tobacco and to subsistence farming.

2. The larger part of the Middle West differs from the Northeast which is devoted largely to dairying, fruit raising, and vegetable farming. Those parts of the Middle West which resemble the Northeast in terms of agricultural production differ in some other respects.

3. The Middle West differs from the land further west, even though much grazing takes place in the West.

   a. Many livestock are shipped from the drier areas of the West to the Middle West for feeding and fattening prior to being sent to market.

   b. The West grows more wheat than corn and soybeans.

area west of the South meridian? Does the Middle West differ enough from these other regions to justify including all of the sub-agricultural regions of the Middle West within the Midwest as separate from the other regions? Do the physical features justify such regionalization?

Have pupils begin a chart showing differences between regions. Includ Midwest sub-regions in the chart. Pupils should fill in the column on agriculture at this time. (See page 31.)

on The South, plate 16.
Whittemore, et.al., U.S., Canada, L. Am., p. 44.

This chart should be made on a large sheet of paper.

Region	Differences Between Regi			
	Agriculture	Population Density	Urbanization	Manufacturing (type)
MIDDLE WEST				
Upper Midwest				
Central Region				
Northeastern Midwest				
Southern Midwest				
NORTHEAST				
Northern Section				
Southern Section				
Western Section				
SOUTH				
Hill and Mt. Regions				
Piedmont Region				
Coastal Plain				
WEST				
Plains				
Northern Coastal Region				
Southern Coastal Region				
Inter-Mt. Region				
Mt. Region				

ade on a large sheet of paper.

	Differences Between Regions					
-	Population Density	Urbanization	Manufacturing (type)	Manufacturing (% engaged in)	Transportation	Major Trade Relations

S. Interprests map symbols in terms of map legend.

G. Phenomena are distributed unevenly over the earth's surface, resulting in diversity or variability from one place to another.

G. Population is distributed unevenly over the earth's surface; many of the land areas are thinly populated.

G. A number of factors -- climate, surface features, natural resources, accessability, and history -- affect settlement patterns.

G. Large cities are characterized by a large number of people per square mile.

S. Interprets map symbols in terms of legend.

G. A number of factors -- climate, surface features, natural resources, accessability, and history -- affect settlement patterns.

G. People in most societies of the world depend upon people who live in other communities, regions, and countries for goods and services and for markets for their goods.

III. The Middle West di
terms of populatio
tion, and ratio be
cities.

A. The Midwest dif
terms of popula
the population

1. Population d
western part

2. Population d
eastern part

B. The Middle West
trade towns whi
Northeast has m
than does the M
of people in th
ufacturing and s
percentage in t
agriculture and

III. The Middle West differs from other regions in terms of population density, degree of urbanization, and ratio between small towns and large cities.

A. The Midwest differs from other regions in terms of population density; within the region, the population is distributed unevenly.

1. Population densities tend to be low in the western part of the Midwest.

2. Population densities tend to be high in the eastern part of the Midwest.

B. The Middle West has many small and medium sized trade towns which serve agricultural areas; the Northeast has more large cities for its area than does the Middle West. A larger percentage of people in the Northeast are engaged in manufacturing and so live in urban areas; a larger percentage in the Middle West are engaged in agriculture and so live on farms.

26. Examine a population density map of the region. In what parts of the Midwest are there areas of very dense population? sparse population? How can you explain this difference? Why do you find some areas of urban population within areas of otherwise low population density?

    Now examine a population density map of the U.S. How does the Midwest compare with the other regions in terms of population density?

27. Have pupils study a highway or political map of the Midwest. Be sure to review the use of symbols to show towns and cities of different sizes. Have pupils compare the number of cities with the number of small towns. Ask: What have we studied which provides a reason for this difference?

    Now have a pupil read Borchert's description of the growth of small towns in the Midwest. He should explain to the class why so many small towns have developed.

nsity map of the region. In what parts of
reas of very dense population? sparse pop-
xplain this difference? Why do you find
ulation within areas of otherwise low pop-

n density map of the U.S. How does the
e other regions in terms of population

Borchert and M
Guigan, Geogra
of the New Wor
p. 17.
Informative Cla
room Picture set on
The Northeast, plate
16.

hway or political map of the Midwest. Be
of symbols to show towns and cities of dif-
ils compare the number of cities with the
Ask: What have we studied which provides
rence?

orchert's description of the growth of
est. He should explain to the class why
e developed.

Borchert and Mc-
Guigan, Geography
of the New World,
pp. 138-143, 52.

S. Interprets map symbols in terms of map legend.

S. Draws inferences from maps.

G. Man changes the character of the earth.

S. Draws inferences from maps.

S. Sets up hypotheses.

G. A region is an area of one or more homogeneous features. The core area is highly homogeneous, but there are transitional zones where boundaries are drawn between different regions.

G. Regions are delimited on many different bases, depending upon the purpose of the study. Some are delimited on the basis of single pheonomenon, some on the basis of multiple phenomena, and some on the basis of functional relationships.

S. Applies previously-learned concepts and generalizations to new data.

G. Towns need means of shipping goods in and out; they are likely to grow up where transportation is good, particularly where different types of transportation meet.

IV The Midwest has well-developed transportation facilities.

A. The Middle West has had the advantage of several important waterways. Most of the large industrial cities in the region are located on one of them.

28. Show pupils the map which indicates areas in the eastern part
the country which have more people working in factories than
farms. Where are these areas located in the Middle West? How
does the Middle West compare with the Northeast? What does th
difference mean in terms of the percentage of the population l
ing in cities?

29. Show pupils maps of manufacturing cities or large urban center
in the United States and of industrial regions in the east. As
How does the Middle West compare with other regions in terms o
the number of such centers? How does it compare with the Nort
east in terms of the percentage of land taken up by large citi
Where are most of the cities of the Middle West located? Can
think of any reasons for their location? (Let pupils set up h
potheses to test in their reading.)

Have pupils add to their charts on the Regions of the U.S. (S
activity 24.) Now ask: Which other region does the Middle We
seem most like in terms of population densities, urbanization,
industrialization? Does the Middle West deserve to be set off
from the Northeast in terms of these factors? Why or why not?
Does the Upper Middle West resemble the Middle West more or th
Northeast more in terms of these factors? Does it resemble th
Middle West more or the West more in terms of these factors?

30. Now say: How many of the large cities in the region are locat
on the Great Lakes? What advantages would their location give
them?

ıap which indicates areas in the eastern part of
ı have more people working in factories than on
these areas located in the Middle West? How
Vest compare with the Northeast? What does the
n terms of the percentage of the population liv-

Deasy et.al., *The World's Nations*, p. 56.

of manufacturing cities or large urban centers
tes and of industrial regions in the east. Ask:
le West compare with other regions in terms of
h centers? How does it compare with the North-
the percentage of land taken up by large cities?
the cities of the Middle West located? Can you
ons for their location? (Let pupils set up hy-
in their reading.)

o their charts on the Regions of the U.S. (See
w ask: Which other region does the Middle West
terms of population densities, urbanization, and
? Does the Middle West deserve to be set off
t in terms of these factors? Why or why not?
ddle West resemble the Middle West more or the
terms of these factors? Does it resemble the
or the West more in terms of these factors?

y of the large cities in the region are located
s? What advantages would their location give

G. Inland water routes provide cheaper transportation for heavy goods than do railroads, trucks, or planes.

G. The signifiance of location depends upon cultural developments both within and outside the area.

G. Man uses his physical environment in terms of his cultural values, perceptions and level of technology.

G. Man changes the character of the earth.

G. Inland water routes provide cheaper transportation for heavy goods than do railroads, trucks, or planes.

1. The Great La
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1. The Great Lakes Seaway carries a tremendous tonnage each year.

a. Most of the cities located on this waterway owe their growth to the existence and development of this waterway.

b. Duluth-Superior is one of the largest ports in the country, measured in the tonnage of freight which passes through it.

c. The Great Lakes permit the Middle West to ship surplus minerals and wheat eastward cheaply.

31. Assign the study of the map, Great Lakes Waterway, which app
in Borchert's Geography of the New World. Have the youngste
pothesize on the main types of products being shipped out of
into each of the lake ports. Tape record lesson for evaluat
purposes. Borchert discusses each of these ports and their
lands. Youngsters should check out their hypotheses against
material.

32. Show pupils pictures of the Great Lakes and of shipping on t
Great Lakes. Also show them pictures of the canals through
the large ships pass. (Perhaps contrast with a picture show
men pushing a boat between two of the lakes in earlier days
order to get a large boat onto the western lake.)

33. Discuss the following data about shipments from the ports of
Duluth and Superior (all figures are in thousands of short to
1950: 53,009; 1955: 61,156; 1959: 25,868; 1960: 37,512.
What happened? Why? Let a group of pupils investigate the d
cline of iron ore shipments and the more recent rise of the t
nite industry.

34. Have a pupil investigate and report to the class on what has
pened to wheat shipments from Duluth-Superior in recent years
is the wheat brought to these ports?

he map, Great Lakes Waterway, which appears
phy of the New World. Have the youngsters hy-
n types of products being shipped out of and
e ports. Tape record lesson for evaluation
discusses each of these ports and their hinter-
hould check out their hypotheses against this

Borchert and Mc-
Guigan, Geography
of the New World,
p. 153 (map) and
pp. 152-165 for
discussion.

of the Great Lakes and of shipping on the
how them pictures of the canals through which
(Perhaps contrast with a picture showing
etween two of the lakes in earlier days in
boat onto the western lake.)

McLaughlin, et.al.,
The Heartland, pp.
69-83.

data about shipments from the ports of
all figures are in thousands of short tons).
61,156; 1959: 25,868; 1960: 37,512. Ask:
Let a group of pupils investigate the de-
pments and the more recent rise of the taco-

ate and report to the class on what has hap-
nts from Duluth-Superior in recent years. How
to these ports?

S. Applies previously-learned concepts and generalizations to new data.

G. Towns need means of shipping goods in and out; they are likely to grow up where transportation is good, particularly where different types of transportation meet.

G. Inland water routes provide cheaper transportation for heavy goods than do railroads, trucks, or planes.

S. Sets up hypotheses.

G. Factories must have some form of power to run machinery.

G. Power for industries is obtained from a number of sources, including water power.

d. The S
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3. The Miss
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B. Some cities
water falls

d. The St. Lawrence Seaway permits industrial cities such as Chicago, Cleveland, and Gary to sell more manufactured goods than they could before it was built.

2. The Ohio River has provided cheap transportation from the eastern part of the Middle West to the Mississippi.

3. The Mississippi has provided an important means of transporting goods in the western part of the Middle West region.

B. Some cities grew up on smaller rivers where water falls provided power.

35. Now have a committee report on the St. Lawrence Seaway and its fects upon the Middle West. It might prepare a bulletin board play to illustrate its findings or it might present a report a companied by illustrations.

36. Show pupils a map of large Midwestern cities once more. Ask: many of those which are not on the Great Lakes are on the Ohio the Mississippi? the Missouri? What advantage would such a lo tion give them?

37. Have the class look at the same maps in activity 36. Ask: Ho many of the industrial areas of the Middle West are not on eit the Great Lakes or on one of these three large rivers? What m explain their growth? Let pupils set up hypotheses to test.

38. Remind pupils that water power was important in the developmen Minneapolis. Now have pupils examine a map to identify the imp tant cities in the Middle West which grew up around water powe sites.

eport on the St. Lawrence Seaway and its ef- West. It might prepare a bulletin board dis- findings or it might present a report ac- ions.	e.g. White, The St. Lawrence Seaway of North America, ch. 8.
arge Midwestern cities once more. Ask: How e not on the Great Lakes are on the Ohio? issouri? What advantage would such a loca-	Borchert and McGuigan, Geography of the New World, p. 120.
the same maps in activity 36. Ask: How areas of the Middle West are not on either one of these three large rivers? What might Let pupils set up hypotheses to test.	Borchert and McGuigan, Geography of the New World, p. 120.
er power was important in the development of pupils examine a map to identify the impor- dle West which grew up around water power	Borchert and McGuigan, Geography of the New World, p. 144.

G. A number of factors -- climate, surface features, resources, accessability, and history -- affect settlement patterns.

G. Cities which become big trading centers tend to grow up where there is a break in transportation and so where goods must be moved from one type of transportation to another or from one company's transportation facilities to those of another company (as on railroads).

S. Draws inferences from maps.

S. Applies previously-learned concepts and generalizations to new data.

G. Some types of landforms hamper the construction of railroads and highways, although technological advances have overcome many topographic limitations.

G. The significance of location depends upon cultural developments both within and outside of the area.

C. The Middle
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C. The Middle West has the heaviest concentration of railroads in the country; it also has well developed highways and airline systems.

1. Some cities grew up close to mineral resources and were connected with other areas by railroads and roads.

2. The large industrial centers are all on railroad lines; a number are on both railroad lines and inland water routes.

3. The Middle West has more railroad milage density than any other part of the country.

   a. It is easy to build railroads on land which is largely level or gently rolling; the Northeast is much more rugged than most of the Middle West.

   b. The Middle West lies on the direct route between the populous cities of the East and the Far West.

39. Show pupils maps of some of the cities which grew up close to mineral wealth. Ask: Why might cities grow up in such locations? What would be needed besides the minerals in order to develop cities in these places?

40. Show pupils a map of railroad lines in the Middle West. Have pupils locate important manufacturing cities of the Middle West which are not on the Great Lakes, the Ohio, or the Mississippi. Where are they in relationship to railroad lines? Of what importance is this? Have pupils examine the map in Borchert which shows Indianapolis on a railroad and highway map. A pupil might tell the class about how the city developed. Now have pupils examine the location of the other large industrial centers which are on important waterways? How well are these cities served by railroads? What advantage do they have because they are at a break in transportation between water and railroad transportation?

41. Have pupils study a railroad map of the United States. Ask: What do you notice about the density of rail lines in the Middle West as compared to other parts of the country, including the Northeast What might account for the greater density in the Middle West?

Now have pupils examine railroad hubs in the country. Which city seems to be the most important railroad center? What factors may have led to its development as a railroad center? Show pictures of Chicago's railroad yards and a map of railroad lines into Chicago.

e cities which grew up close to min-
cities grow up in such locations?
he minerals in order to develop

Borchert and Mc-
Guigan, Geography
of the New World,
pp. 149, 151.

lines in the Middle West. Have
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es, the Ohio, or the Mississippi.
to railroad lines? Of what im-
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ity developed. Now have pupils ex-
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they have because they are at a
n water and railroad transportation?

Borchert and Mc-
Guigan, Geography
of the New World,
pp. 120, 169, 160.
Deasy, et.al., The
World's Nations,
p. 78.

p of the United States. Ask: What
y of rail lines in the Middle West
the country, including the Northeast?
ater density in the Middle West?

Deasy, et.al., The
World's Nations,
p. 29.

ad hubs in the country. Which city
railroad center? What factors may
a railroad center? Show pictures
d a map of railroad lines into

McLaughlin et.al.,
The Heartland, pp.
22-23, 11.
Borchert and Mc-
Guigan, Geography
of the New World,
pp. 160, 162.

S. Draws inferences from maps.

G. A place needs cheap and rapid transportation in order to carry on much trade with other places.

G. The significance of location depends upon cultural developments both within and outside of the area.

G. Towns need means of shipping goods in and out; they are likely to grow up where transportation is good, particularly where different types of transportation meet.

G. Inland water routes provide cheaper transportation for heavy goods than do railroads, trucks, or planes.

S. Applies previously-learned concepts and generalizations to new data.

S. Sets up hypotheses.

S. Draws inferences from maps.

4. The Middle West i
and airlines.

V. The Middle West is an i
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the Northeast.

A. The Middle West has
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4. The Middle West is well served by highways and airlines.

V. The Middle West is an important diversified industrial region, although industry is concentrated on a smaller percentage of the land than it is in the Northeast.

   A. The Middle West has many industries which depend upon agricultural and forest products.

42. Have pupils examine highway and airline maps of the Middle West. How well are the cities of the midwest served by each type of transportation? Why is this important?

43. Show pupils a picture of Chicago's O'Hare airport and read aloud a brief description of the airport to illustrate the fact that i is the busiest airport in the country. Ask: Why do you think i has more air traffic than New York? than Los Angeles? than the Twin Cities?

44. By way of summarizing the section on transportation, show the cl either the filmstrip on Cities and Commerce or the filmstrip on dle States -- Commerce. Both stress the importance of the Great Lakes Waterway on the Midwest area.

45. Have pupils add information about transportation to their charts on regional differences.

46. Ask: Given what you know about agriculture in the Middle West, what kinds of industry would you expect to find in the region?

Have pupils examine a map showing the forested areas remaining in the Middle West. From what pupils know about Minnesota's forests, what would they expect to find true about forest industries in the rest of the Middle West? What kind of industry might grow up because of resources from the Great Lakes?

y and airline maps of the Middle West.
the midwest served by each type of
is important?

Highway maps from various highway atlases. Airline map in Goode's World Atlas or Glendinning, et.al., Your Country & the World, p.65.

hicago's O'Hare airport and read aloud
airport to illustrate the fact that it
the country. Ask: Why do you think it
New York? than Los Angeles? than the

McLaughlin, et.al., The Heartland, pp. 22-23.

section on transportation, show the class
ties and Commerce or the filmstrip on Mid-
oth stress the importance of the Great
est area.

Filmstrips: Cities and Commerce, SVE. Middle States -- Commerce, E.B.F.

n about transportation to their charts

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showing the forested areas remaining
what pupils know about Minnesota's
xpect to find true about forest in-
e Middle West? What kind of industry
sources from the Great Lakes?

Borchert and McGuigan, Geography of the New World, p. 119.

G. Today factories tend to locate close to the source of needed raw materials if these materials are perishable or heavier and/or bulkier than their finished product; factories tend to locate closer to their markets than to the source of needed materials if their products are heavier and bulkier than the raw materials, and if their products are perishable.

G. Diversification of production makes a region less dependent upon price fluctuations for one product or upon the supply of specific resources.

G. Today factories tend to locate close to the source of needed raw materials if these materials are perishable or heavier and/or bulkier than their finished product; factories tend to locate closer to their markets than to the source of needed materials if their products are heavier and bulkier than the raw materials, and if their products are perishable.

47. Project pictures to illustrate the great diversity of products manufactured in the Middle West from farm and forest products.

48. Have a committee skim various text accounts of the Middle West to locate other kinds of products made from agricultural products, forest resources, and Great Lake fisheries. They should prepare a bulletin board display or a table display to illustrate their findings. Ask: Why do you think factories were set up here rather than near or in eastern cities?

strate the great diversity of products
lle West from farm and forest products.

McLaughlin et.al.,
The Heartland, pp.
40-47.
"The Source of the
River of Abundance,"
Life, Nov. 23, 1963,
pp. 53 ff.

rious text accounts of the Middle West to
oducts made from agricultural products,
eat Lake fisheries. They should prepare
or a table display to illustrate their
you think factories were set up here
astern cities?

For pictures of
Great Lakes fishery see Informative Classroom
Picture Set on The
Midwest, plate 25.

Some things can be produced better in one place than another because of climate, resources, transportation routes, access to resources, access to markets, people's skills, etc.

G. Industry today is dependent upon iron and steel for machines even when the factory does not use steel as a resource in making its products.

G. Some things can be produced better in one place than another because of climate, resources, transportation routes, access to resources, access to markets, people's skills, etc.

B. The Middle West
raw materials n
a number of ste

1. The Lake Sup
Wisconsin, a

2. Ohio, Indiana
coal-produci

3. Michigan and
limestone.

4. The steel in
Chicago - Ga
Lake Michiga
the Great La
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C. Many industries
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B. The Middle West possesses large amounts of the raw materials needed to produce steel; it has a number of steel-producing centers.

1. The Lake Superior districts in Minnesota, Wisconsin, and Michigan furnish iron ore.
2. Ohio, Indiana, and Illinois are important coal-producing states.
3. Michigan and Ohio furnish huge supplies of limestone.
4. The steel industry is concentrated in the Chicago - Gary area at the southern tip of Lake Michigan and in the eastern area along the Great Lakes. Iron ore is shipped to these spots by way of the Great Lakes.

d better
because
nsporta-
ources,
s skills,

C. Many industries in the Middle West have grown up to take advantage of the steel industries in the locality.

49. Examine a minerals map or maps of the U.S. or of the Midwest
minerals are found in this region? What kinds of industry m
one expect to find because of these minerals?

Request the free kit on How Steel is Made from Public Relati
Department, U.S. Steel Corporation, 71 Broadway, New York 6.
kit contains samples of iron ore, limestone, and steel. Sho
filmstrip which comes with the kit. Then have pupils identi
raw materials needed to make steel. (Now show them the spec
minerals and the final product.) Have pupils examine maps o
erals once more to find out which of these minerals are loca
in the Middle West and if they are located close together.
pupils have come through the Center's fourth grade course, t
will have learned that iron ore from Minnesota is shipped vi
Great Lakes to places which are close to coal resources. If
have pupils examine a map of steel producing centers and ask
Why do you think the steel is produced in these places rath
than in large quantities in northern Minnesota? Where do th
centers get the raw materials they need to make steel? How
the Great Lakes helped in the development of the steel indust
What other kinds of industries would you expect to have grow
in these steel-producing centers or close to them?

Prepare a bulletin board display of pictures showing ore mini
boat carrying ore, and steel plant.

50. Have several pupils skim textbook accounts of the Middle West
locate types of manufacturing which have grown up in the Midd
West to make use of the steel from nearby steel factories. T
should prepare a display to illustrate their findings, perhap
ing a map to locate where such products are produced. Such a
play might include small steel products on a table below the
letin board. The bulletin board itself might include a map o
Middle West and a series of pictures around the map to illust
products made from steel (e.g. autos, appliances, buildings,

map or maps of the U.S. or of the Midwest. What
in this region? What kinds of industry might
because of these minerals?

For map, see Borchert and McGuigan, Geog. of the New World, p. 151. (You will need to add limestone sources to this map.)

t on How Steel is Made from Public Relations
eel Corporation, 71 Broadway, New York 6. This
s of iron ore, limestone, and steel. Show the
es with the kit. Then have pupils identify the
d to make steel. (Now show them the speciman
nal product.) Have pupils examine maps of min-
find out which of these minerals are located
and if they are located close together. If
rough the Center's fourth grade course, they
hat iron ore from Minnesota is shipped via the
es which are close to coal resources. If not,
a map of steel producing centers and ask:
e steel is produced in these places rather
ities in northern Minnesota? Where do these
materials they need to make steel? How has
ped in the development of the steel industry?
industries would you expect to have grow up
ucing centers or close to them?

board display of pictures showing ore mining,
and steel plant.

Informative Classroom Picture Set on The Midwest, plates 17,11,20.

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the steel from nearby steel factories. They
splay to illustrate their findings, perhaps us-
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ulletin board itself might include a map of the
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. Specialization makes for interdependence

G. People in most societies depend upon people who live in other communities, regions, and countries for goods and services and for markets for their goods.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. A number of factors -- climate, surface relief, resources, accessability, and history -- affect settlement patterns.

G. Diversification of production makes a region less dependent upon price fluctuations for one product or upon the supply of specific resources.

G. People in most societies depend upon people who live in other communities, regions, and countries for goods and services and for markets for their goods.

D. Middle Western cities tend to have diversified industries,

E. The Middle-West has important oil resources.

The objects and pictures could be connected by string to places which produce them.

51. If pupils have come through the Center's fourth grade course, remind them of the assembly plant which they visited the year before. Then show them a map or identify on the map the largest auto industrial area in the country. Perhaps project pictures from The Heartland to illustrate the way in which the auto industry depends upon other places as well as the degree of technological specialization within any one plant.

52. Divide the class into groups to do research on such cities as: Chicago; Waterloo, Iowa; Rockford, Illinois; South Bend, Indiana; Grand Rapids, Michigan; Dayton, Ohio; Hibbing, Minnesota; Detroit, Michigan; Duluth, Minnesota. Why was the city originally established? What were its geographical advantages? Are these advantages still important? What is the main service rendered by the city? Has the population increased or decreased during the last twenty or thirty years? How has transportation helped or hindered the development of the city? To what extent has the city diversified its industry? (Have each group prepare a booklet on its city and display the booklets on a classroom table. Each group might then compare its city briefly with the Twin Cities and the other cities which have just been described in class.) Afterwards ask: Which of these cities developed diversified industries? Were they large or small cities?

53. Project pictures from The Heartland to illustrate the great diversity of products manufactured in one city in the Middle West.

54. Project a map and pictures to illustrate the oil-producing areas of the Midwest. Ask: Why are these oil resources important?

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McLaughlin, et.
The Heartland,
97-107.

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and McGuigan, Geog.
of the New World.
and Dederick et.al.,
Your People and Mine,
ch. 17 (Chicago).

e Heartland to illustrate the great diver-
tured in one city in the Middle West.

McLaughlin, et.al.,
The Heartland,
pp. 24-25.

s to illustrate the oil-producing areas of
are these oil resources important?

G. A region is an area of one or more homogeneous features; the core area is highly homogeneous, but there are transitional zones where boundaries are drawn between different regions.

G. Regions are delimited on many different bases, depending upon the purpose of the study. Some are delimited on the basis of a single phenomenon, some on the basis of multiple phenomena, and some on the basis of functional relationships.

VI. The Middle West can be set apart as a region on the basis of multiple criteria.

55. Show the filmstrip Cities of the Middle West by way of review. [illegible] Does this filmstrip show us anything that we have not already found out about Midwest cities? Have we found out anything about them which is not shown in the filmstrip?

56. Conduct a discussion on the topic: Why is the Middle West considered to be a rather self-sufficient region?

57. Or view and discuss the film, The Middle States. This film points out this area's contributions to our national strength and points out the unique balance between agriculture and industry which serves to make this region one of the most self-sufficient areas of our country.

58. Have pupils add data on industrialization and major trade relations of the upper Midwest to their charts which compare regions. Point out that they will add more to them or modify them as they study other regions. However, at this time, point out that industry in the Northeast is also diversified.

Now ask pupils to examine all of the data on these charts. On what basis can the Middle West be separated as a region from the Northeast? What criteria are being used in drawing lines between these two regions? Do you think that the Upper Midwest should be included in the region of the Middle West? Why or why not? Should the northern lakes area be included in this region or in a region extending into Northern New England? Why? (Help pupils see that regionalization depends upon the criteria used and the purposes of the geographer.)

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es? Have we found out anything about [illegible]
the filmstrip?

[illegible]
[illegible]
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The Middle States,
11 min., E.B.F.

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MATERIALS OF INSTRUCTION

I. Books and Articles for Pupils

Borchert, John and Jane McGuigan. Geography of the New World. Chicago: Rand McNally, 1961.

Dederick, Nelle, Josephine MacKenzie, Ernest Teigs, and Fay Adams. Your People and Mine. Boston: Ginn, 1965.

White, Anne Terry. The St. Lawrence, Seaway of North America. Champaign: Garrard, 1961.

Whittemore, Katheryne T., Melvina Svec, and Marguerite Uttley, United States, Canada, and Latin America. Boston: Ginn, 1966.

II. Materials to be Used by Teacher as Sources of Maps, Pictures, and Selections to be Read Aloud.

Deasy, George F., Phyllis R. Greiss, E. Willard Miller, and Earl C. Case. The World's Nations. Philadelphia: J.B. Lippincott Co., 1958.

Glendinning, Robert, Ernest Teigs and Fay Adams. Your Country and the World. Boston: Ginn, 1966 ed.

McLaughlin, Robert, and the Editors of Time-Life Books. The Heartland (Time-Life Library of America Series), New York: Time Inc., 1967.

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Chicago: Rand

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dams. Your Peo-
Ginn, 1965.

t. Lawrence, Sea-
Champaign: Garrard,

Melvina Svec, and
ed States, Canada,
on: Ginn, 1966.

eacher as
, and Selections

R. Greiss, E.
l C. Case. The
delphia: J.B.

st Teigs and
y and the World.

he Editors of
eartland (Time-
Series), New

Youngblood, Dick. "Plan for Leasing of Pigs Pays Off," Minneapolis Tribune, May 4, 1967, pp. 1, 4.

Informative Classroom Pictures, Grand Rapids, Michigan.

Set on The Midwest
Set on The South
Set on The West

"Illinois," National Geographic, June, 1967, pp. 745-797.

III. Film

The Middle States, 11 min., E.B.F.

IV. Filmstrips:

Cities and Commerce, S.V.E.

Cities of the Middle West.

Middle States-Commerce, E.B.F.

Then and Now in the Cornbelt, E.B.F.

APPENDIX A

THE TALE AND TRAIL OF
TWO CITIES

A Field Trip for Young People

by

Lester E. Brown

The Tale and Trail of Two Cities

It is impossible to understand or appreciate the site and situation of the Twin Cities without examining their relationship to the Mississippi River. It would seem mandatory for teachers in the Twin Cities area to conduct a field trip to the key spots along the Father of Waters. The following outline is offered as a guide.

The pupils should be briefed about what to look for before the trip starts. If at all possible each pupil should be given a set of maps and questions to be answered at each point.

The beginning and terminus of any field trip is largely determined by the location of the school in relation to the suggested route. Since St. Paul was founded first and since Minneapolis is located upstream from the capital city, it would seem logical to have the field trip start in St. Paul.

1. Indian Mounds Park Lookout

S.E. to W. Panorama: Battle Creek Park in the Bluff area, Pigs Eye Lake and sewage disposal plant, South St. Paul - Newport industrial areas of refineries and meat packing plants, Mississippi River barge terminal, airport and floodplain, bridges across river especially the new freeway bridge, St. Paul loop, and railroad yards.

NOTE: If at all possible have a contour map for each group of three children. Have them look at the difference in elevation between the Mounds Park area and Warner Road. Excellent contour maps are available from the Hudson Map Company in Minneapolis for only 40¢ each.

This area has an especially interesting history since it was an Indian Burial ground.

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This area has an especially interesting history since it was an Indian Burial ground. A short, concise history of this area is presented in Minnesota's Major Historic Sites by June Drenning Holmquist and Jean a Brookins, pp. 18-20.

Points to be Emphasized.

a. Only six mounds remain of the eighteen which were known to exist. The area formerly occupied by these mounds has been taken over by streets and houses.

b. The area across the river formerly was all swamp and is frequently flooded even today. This area has been filled in and drained and now offers a good example of how man changes his environment.

c. The significance of the barge terminal should be discussed. Some appropriate questions would seem to be: 1. What type of cargo is carried on the barges? (The brochure "The Upper Mississippi River . . . .nine foot channel", available without charge from the Corps of Engineers, 1217 U.S. Post Office, St. Paul 55101, presents a graphic summary of the type of commodities transported.) 2. What is a barge terminal? 3. What happens to the barges at the terminal?

d. The levee at St. Paul offered a natural landing place for early river traffic because it was the open space between Mound's Bluff and other bluffs further upstream. It should be emphasized that the area across the river consisted of swamps and was Indian territory at that time.

e. The Trout Creek Region and the area immediately below the Bluffs has been altered greatly by man in the course of building railroads and highways. The seemingly natural levee that exists at the present was actually man-made in the 1860-70's.

2. The Chapel of St. Paul

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2. The Chapel of St. Paul

Background reading: *Minnesota's Major Historial Sites*, pp. 21-23.

In 1841 a priest from Dubuque built the log chapel and named it the "Chapel of St. Paul." The name of St. Paul was soon applied to the entire settlement. In 1842 the American Fur Company built a post and several buildings in St. Paul. Four years later the town aqquired a post office. Not until 1849 was the town incorporated as a town. At that time it had an area of about 224 acres.

Points to be Emphasized:

a. This area is located on a bluff area. (The youngsters can appreciate this fact by walking out on the Robert Street Bridge and looking back towards the Mounds Park area. The natural levee and valley in between these bluffs should be noted.

b. While the children are still standing on the Robert Street Bridge, read the following first-hand description of St. Paul written in the summer of 1849:

> "On the 13th of June I counted all the buildings in the place, the number of which, including shanties and those in every state of progress, from the foundation wall to completion, was one hundred and forty-two. Of the above, all, except about a dozen, were probably less than six months old. They included three hotels, one of which is very large, and is now open for the accomodation of travelers; a state house, four warehouses, ten stores, several groceries, three boarding houses, two printing-offices, two drug stores, one fruit and tobacco store, one or two blacksmith's shops, one wagon shop, one tin shop, one or two baker's shops, one furniture-room, a billiard and bowling saloon, one school-house, in which a school of about forty children is kept by a young lady, and where divine services are performed every Sabbath, by a minister of the Episcopalian, Methodist, Presbyterian, or Baptist persuasion. There is also a Catholic church, where meetings are held every alternate Sabbath. At the time mentioned above, there were twelve attorneys-at-law, six of whom were practicing, five physicians, and a large number of mechanics, of various kinds. There was not a brick or stone building in the place. There are, however, good stone quarries in the vicinity, and clay near the town, where persons were employed in making brick." E. S. Seymour, Sketches of Minnesota, The New England of the West, Harper and Brothers, New York, 1850, pp. 89-100.

c. This church was a mission church established in groceries, three boarding houses, two printing-offices, two drug stores, one fruit and tobacco store, one or two blacksmith's shops, one wagon shop, one tin shop, one or two baker's shops, one furniture-room, a billiard and bowling saloon, one school-house, in which a school of about forty children is kept by a young lady, and where divine services are performed every Sabbath, by a minister of the Episcopalian, Methodist, Presbyterian, or Baptist persuasion. There is also a Catholic church, where meetings are held every alternate Sabbath. At the time mentioned above, there were twelve attorneys-at-law, six of whom were practicing, five physicians, and a large number of mechanics, of various kinds. There was not a brick or stone building in the place. There are, however, good stone quarries in the vicinity, and clay near the town, where persons were employed in making brick." E. S. Seymour, Sketches of Minnesota, The New England of the West, Harper and Brothers, New York, 1850, pp. 89-100.

c. This church was a mission church established in 1841 to spread the Faith in the largely unsettled area now occupied by the Twin Cities.

3. Cherokee Park by the High Bridge

East to W. Panorama: West: NSP thermal power plant, grain elevators, railroad lines. North: Seven Hills of St. Paul. Cathedral, Capital, business district. East: Mound's Park, Trout Creek Valley, railroad yards.

Points to be Emphasized:

a. Point out the types of industries and warehouse facilities along the River. Identify the gigantic supply of coal by NSP. The elevators and the gasoline storage facilities further upstream all rely heavily on water transportation.

b. The location of industries along the river's floodplain seems to represent a disregard of the power of nature but may actually reflect the economic advantages of being located close to both water and rail transportation.

c. The Smith Ave. Bridge (High Bridge) was once considered to be the head of navigation but much work has been done on the upper Mississippi to deepen the channel. The present head of navigation is the Soo Line Railroad Bridge located above St. Anthony Falls.

4. St. Peter's Church

West to S.E. Panorama: railroad tracks beneath bluff, Minnesota River, Mendota Bridge, high bluffs on opposite side of river, Fort Snelling proper, Mississippi River, Marina, and Pike Island.

Background reading: Minnesota's Major Historic Sites, pp. 16-17. Gopher Reader, Edited by A. Hermina Poatgieter, pp. 81-84, 85-87.

Although this church is a bona-fide historic site, the main value of this location is the excellent view gained of the site and situation of Fort Snelling.

Points to be Emphasized:

a. Fort Snelling possessed a strategic location according to 19th Century standards i.e. it controlled water transportation in this area. It should be pointed out that the Fort was designed to control transportation on the Minnesota River rather than the Mississippi. Fort Snelling represented the terminus of the river transportation of that era as far as the Mississippi was concerned. The main danger was the Sioux located upstream on the Minnesota.

b. Fort Snelling was originally built on the Mendota side of the river. During the first winter in this area many men died from scurvy. This is rather ironic considering the abundance of available agricultural land in the hinterlands. Why didn't the soldiers farm it?

c. The original fort was made from wood which was replaced by limestone quarried in the area in the 1830's. Several questions should be raised: (1) Why wasn't the original fort built of limestone? (Too time-consuming for a wilderness area). (2) Why is it likely that the limestone for the fort was obtained in the local area? (There are outcrops in evidence and also it would be very difficult to transport the large amount of rock needed to construct the fort.)

5. St. Anthony Falls

St. Anthony Falls: North on Portland to 1st Street S., turn right to parking area between Falls and Washburn-Crosby A. Mill.

River: St. Anthony Falls (upper falls from 3rd Ave. Bridge to Stone Arch Bridge; lower falls ½ mile downstream; both power sites), upper milling area.

North side of River: Pillsbury Milling area, hydro power plants, warehouses, trucking, University Hydraulic Laboratories.

South side of River: General Mills, King Midas, and others (main milling area), early power sites, warehouse, miscellaneous manufacturing, new locks to Upper Harbor (1962).

The south side of the

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St. Anthony Falls: North on Portland to 1st Street S., turn right to parking area between Falls and Washburn-Crosby A. Mill.

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North side of River: Pillsbury Milling area, hydro power plants, warehouses, trucking, University Hydraulic Laboratories.

South side of River: General Mills, King Midas, and others (main milling area), early power sites, warehouse, miscellaneous manufacturing, new locks to Upper Harbor (1962).

The south side of the river is the Minneapolis side, the north side was St. Anthony until 1872 but now is Minneapolis too. Above the Falls was a lumber ponding area which eventually became a railroad yard. Below the falls is the gorge consisting of 60-100 foot bluffs.

Points to be emphasized:

a. St. Anthony Falls used to be located below Fort Snelling. They have receded upstream until today they are located near the Third Avenue Bridge in Minneapolis. Measures have been taken to retard further recession of the

Falls. An excellent commentary on the recession of the Falls and the physiography of the area is available for the teachers in Minnesota's Rocks and Waters by George M. Schwartz and George A. Thiel, pp. 323-328.

Student background material is available in the Gopher Reader, pp. 206-208. This article gives a brief history of the Falls and is accompanied by a map which shows the recession of the Falls over a period of 10,000 years.

b. The Falls were early regarded as a source of power. Soldiers from Fort Snelling constructed a gristmill and sawmill in 1821-23. This power potential was not developed by private individuals until twenty-five years later.

c. The Falls are not used as a direct source of power by the existing flour mills. All the mills rely on electric power for their operations.

d. It has been estimated that the Falls produce as much power today as when they were first harnessed, but their contribution is relatively unimportant now that new and better sources of power are available. But probably even more important is that the Falls provide only a fraction of the total power needed by Minneapolis.

e. The potential importance and the operation of the locks of the Upper Harbor Project should be emphasized. Much background material can be gained from the brochure distributed by the a gristmill and sawmill in 1821-23. This power potential was not developed by private individuals until twenty-five years later.

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f. The dams, the locks, and the bridges all represent man's control over his physical environment. This point is emphasized in both of the Corps of Engineer's borchures.

6. Nicollet Island

Nicollet Island: This landmark is visible from the Third Avenue Bridge.

Points to be emphasized:

a. Nicollet Island is located above the Falls. Attention should be given to the height of the river banks above and below the Falls. The problems encountered in attempting to cross the river at each of the points should be discussed. This question might be asked: Suppose that you wanted to cross the river and no bridges existed. Where might it be easiest to cross? The width of the river above and below the Falls should also be considered. (The river is only about one-half as wide at Nicollet Island.) The factor of rapids should also be taken into account. It is important that the methods of transportation existing at the time of the founding of Minneapolis be used as a criterion of accessibility.

b. The first bridge to span the Mississippi was built at the Nicollet Island point. The growth of Minneapolis as an urban center was *greatly* assisted by this event. The availability of power is often offered as the *key* to Minneapolis' development, but most geographers familiar with the origins of the Mill City stress the importance of accessibility rather than just power. They argue that if it had not been for the fact that this source of power was available through the building of the suspension bridge, it is doubtful whether Minneapolis would have grown into a large urban complex. It would seem that the combination of these two factors plus the willingness of early leaders to invest in and promote this area provided the necessary stimulus for the founding and growth of Minnesota's largest city.

c. Study the map which shows the buildings of Minneapolis in 1857. Note the congestion around the bridge area and the *lack* of congestion around the Falls area.

BIBLIOGRAPHY

General Background:

The extract from G.M. Schwartz's "The Geology of the Minneapolis - St. Paul Metropolitan Area," Minnesota Geological Survey, Bulletin 27, Minneapolis, 1936.

Willoughby M. Babcock, "The Mississippi in the Story of Minnesota," Gopher Reader, 1958, pp. 193-95.

Calvin F. Schmid, Social Saga of Two Cities, Minnesota Council of Social Agencies, Minneapolis, 1937.

Reference Books:

June Drenning Holmquist and Jean A. Brookins, Minnesota's Major Historic Sites, Minnesota Historical Society, St. Paul, 1963.

U.S. Corps of Engineers, "The Upper Mississippi River .... nine foot channel,"1958. (brochure)

A. Hermina Poatgieter, ed., Gopher Reader, Minnesota Historical Society, St. Paul, 1958.

George M. Schwartz and George A. Thiel, Minnesota's Rocks and Waters, University of Minnesota Press, Minneapolis, 1954.

U.S. Corps of Engineers, St. Anthony Falls Upper Harbor Project, 1960. (brochure)